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**FINAL REPORT  
SPACE STATION AUXILIARY  
THRUST CHAMBER TECHNOLOGY**

**BY**

**J. M. SENNEFF, PROGRAM MANAGER**

**BELL AEROSPACE TEXTRON  
BUFFALO, NEW YORK 14240**

**AUGUST 1986**

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## Foreword

Bell Aerospace Textron submits this Final Report as part of the Space Station Auxiliary Thrust Chamber Technology Program, Contract NAS 3-24656.

The work was conducted under the cognizance of Mr. G. Paul Richter of NASA Lewis Research Center who was the Contract Project Manager. Bell personnel include: John M. Senneff, Program Manager; Arthur M. Gorbaty, Design Leader; and Edgar R. Vollaro, Test Director.

## Abstract

A program to design, fabricate and test a 50 lb<sub>f</sub> (222 N) thruster was undertaken (Contract NAS 3-24656) to demonstrate the applicability of the "reverse flow" concept as an item of auxiliary propulsion for the Space Station. The thruster was to operate at a mixture ratio (O/F) of 4, be capable of operating for 2 million lb<sub>f</sub>-seconds (8.896 million N-seconds) impulse with a chamber pressure of 75 psia (52 N/cm<sup>2</sup>) and a nozzle area ratio of 40. Superimposed was also the objective of operating with a stainless steel spherical combustion chamber, which limited the wall temperature to 1700°F (1200°K), an objective specific impulse of 400 lb<sub>f</sub>-sec/lbm (3923 N-seconds/Kg), and a demonstration of 500,000 lb<sub>f</sub>-seconds (2,224,000 N-seconds) of impulse. The demonstration of these objectives required a number of design iterations which eventually culminated in a very successful 1000 second demonstration, almost immediately followed by a changed program objective imposed to redesign and demonstrate at a mixture ratio (O/F) of 8. This change was made and more than 250,000 lb<sub>f</sub>-seconds (1,112,000 N-seconds) of impulse was successfully demonstrated at a mixture ratio of 8. This document contains a description of the effort conducted during the program to design and demonstrate the thrusters involved.

## SUMMARY

A program to evaluate a gaseous-hydrogen and gaseous-oxygen-fueled reverse-flow thruster for the Space Station Auxiliary Propulsion System was undertaken with the design, fabrication and testing of a 50 lb<sub>f</sub> (222N) thrust rocket engine. The thruster was designed to operate at 75 psia (52 N/cm<sup>2</sup>) chamber pressure, and a mixture ratio (O/F) of 4 with a 40 to 1 nozzle area ratio. The objective was to demonstrate a duration capability of 2 million lb<sub>f</sub>-second (8.896 million N-seconds) total impulse.

The program initially included tasks for preliminary and detailed design, fabrication, acceptance testing, duration testing and reporting. Four additional tasks were added to the program when other NASA studies indicated a requirement to operate the thrusters at a mixture ratio of 8 instead of the initially selected mixture ratio of 4.

The initial design of the mixture ratio 4 hardware was based on Bell's experience designing a previously tested 1500 lb<sub>f</sub> (6672 N) thrust engine. The thrust chamber size, fuel injection velocity, oxidizer injector design criteria, and general chamber arrangement were all based as much as possible on the lessons learned in the design of the larger thruster. Fabrication details of the individual components were similar to those of the larger thruster, even though the size difference was substantial.

Testing of the 50 lb<sub>f</sub> (222 N), r=4 thruster indicated that at least some of the larger engine design criteria could not be directly applied to the smaller unit. This in turn required some innovation in developing such criteria and occupied a major portion of the program effort.

The problem was centered in the high chamber wall temperatures experienced during initial testing. It appeared that the chamber wall fuel cooling film was insufficient to protect the chamber walls from the core combustion temperatures at the chamber design operating conditions. The problem was further amplified when the design mixture ratio was increased and the corresponding combustion temperatures also increased. The Bell design is predicated upon stainless steel chambers for low cost and ease of manufacture. As a consequence, temperatures in the 1700°F (1200°K) region are limiting. Other materials could be used to increase the allowable wall temperature, but in this case, the maximum wall temperature was fixed.

The solution was to increase the oxidizer flow in the center of the combustor, thereby decreasing temperature near the chamber walls. A modified injector was evolved which injected oxygen centerflow sufficiently downstream of the vortex cup to negate any center flow/vortex interference and resulted in the desired wall conditions.

A 1000 second firing at a mixture ratio of 4 validated the design. However, system studies conducted for NASA by other contractors indicated that mixture ratio 8 operation was more compatible with evolving Space Station conceptual designs and emphasis in the present work was redirected by NASA to a new design at mixture ratio 8.

The mixture ratio 8 demonstration chamber used as many existing parts as possible while still meeting the new requirements. The entire mixture ratio 4 nozzle was used, but a new oxidizer injector and chamber had to be fabricated.

To use the available nozzle, it was necessary that approximately the same cooling conditions exist in the throat section. Thus, the fuel flow was kept the same as at r=4 but the oxidizer flow was doubled to obtain the new mixture ratio of 8. The result of this increased propellant flow was operation at approximately 102 psia (70.3 N/cm<sup>2</sup>)

chamber pressure and a measured thrust of approximately 77 lb<sub>f</sub> (343 N). This was deemed acceptable for demonstration purposes.

Ten 300 second firings were conducted to demonstrate 200,000 lb-seconds of total impulse. A total of approximately 250,000 lb<sub>f</sub>-seconds (1,112,000 N-seconds) impulse was performed when additional tests to evaluate the effect of mixture ratio were added to the duration tests. This series of tests was conducted over a mixture ratio range from r=3 to r=8 to evaluate changes in both performance and wall temperature as mixture ratio values were varied over the entire range that a space station thruster might be called on to operate.

The results of this program were considered to be highly successful in demonstrating the capability of the Bell vortex combustor to accommodate broad changes in operating conditions, as well as its outstanding long-life potential. It appears to be an attractive candidate for Space Station auxiliary propulsion, Orbit Transfer Vehicle attitude control, and reaction control and orbit maneuvering for the National Aerospace plane (X-30).

## Introduction

The manned Space Station will require an Auxiliary Propulsion System (APS) for attitude control, orbit positioning, and docking maneuvers. The selection of an optimum APS for the Space Station is a complicated issue. Numerous studies have been conducted to identify and evaluate viable candidate propulsion systems for Space Station applications. Some of the more important considerations for this application are long, reliable life potential, low cost, and high performance. One of the candidate systems being considered for the Space Station includes gaseous Hydrogen ( $\text{GH}_2$ )/gaseous Oxygen ( $\text{GO}_2$ ) thrusters in the 15-50  $\text{lb}_f$  (67-222 N) thrust range.

Other potential applications for thrusters of this type include attitude control of NASA's Orbit Transfer Vehicle (OTV) and orbit maneuvering and reaction control propulsion for the X-30 or National Aerospace plane (NASP).

A program to develop the technology requirements and demonstrate the feasibility of a long-life, reliable 50- $\text{lb}_f$   $\text{GH}_2/\text{GO}_2$  thruster was initiated by NASA Lewis Research Center, at Bell Aerospace Textron, a Division of Textron, Inc. in the spring of 1985. The 50- $\text{lb}_f$  thruster design is based on a unique, proven "reverse flow" concept, utilizing the  $\text{GH}_2$  as a regenerative cooling medium, and incorporating low cost stainless steel materials for fabrication details. This report presents the results of the analytical, design, and experimental test efforts conducted to develop and demonstrate thruster technology, and a comparison of performance and heat transfer characteristics with analytical predictions.

The basis for the design of this thruster was a 1500  $\text{lb}_f$  (6672 N) thrust unit demonstrated under Contract NAS 3-14353, and reported in NASA CR-120881. The definition of this program was to duplicate, where possible, all the design features of the larger thruster and thus minimize the risk of "new" features. The chamber design was scaled down to the 50  $\text{lb}_f$  (222 N) thrust size and the fabrication technique maintained. The program was originally structured to contain six tasks which were as follows:

Task I	Preliminary Analysis and Design
Task II	Detailed Design
Task III	Components Fabrication
Task IV	Proof Test and Delivery
Task V	Life Test and Health Monitoring
Task VI	Reports

During the course of this program, new information was introduced from NASA-sponsored systems studies which indicated the desirability of operating at a much fuel leaner mixture ratio, and following the first long duration test of the thruster, the program emphasis was redirected to obtain a timely demonstration of the hardware at a O/F mixture ratio of 8.

To accomplish this demonstration, three more tasks were added to the program which were used to obtain the mixture ratio and demonstration hardware and to accomplish the feasibility demonstration. The demonstration program concluded with successful operation of this hardware at the specified conditions.

## The Reverse Flow Thruster

The reverse flow concept is based on an unconventional use of gas vortex mixing to create a simplified combustor for use with  $\text{GH}_2$  and  $\text{GO}_2$  propellants. The reverse flow pattern is created when hydrogen is injected as an annular sheet at a station in the nozzle convergent section, flows toward the front of the spherical combustor where the flow is reversed, and mixes with a vortexing stream of oxygen gas. The concept thus combines the reverse flow principle of fuel injection with vortex oxidizer gas injection, forming large chamber mixing vortices and an exposed cooling zone along the chamber wall (Fig. 1). Experiments with this type of combustor have been conducted since 1958, initially at the Air University, Institute of Technology, Wright-Patterson Air Force Base<sup>1</sup> and later at Bell Aerospace Textron. Still later, initial interest in hydrogen and oxygen for the Space Shuttle spurred a number of developments with the most refinement of the technology displayed at the 1500-lbf thrust level.<sup>2,3,4,5</sup> The 1500-lbf (6672 N) thruster demonstrated the technology for a qualifiable chamber prior to NASA's decision to eliminate  $\text{GO}_2$  and  $\text{GH}_2$  as Shuttle reaction control propellants. In the absence of identifiable requirements, interest in both gaseous propellant injection and the reverse flow concept lay dormant for more than a decade until recently revived for the Space Station and related applications.

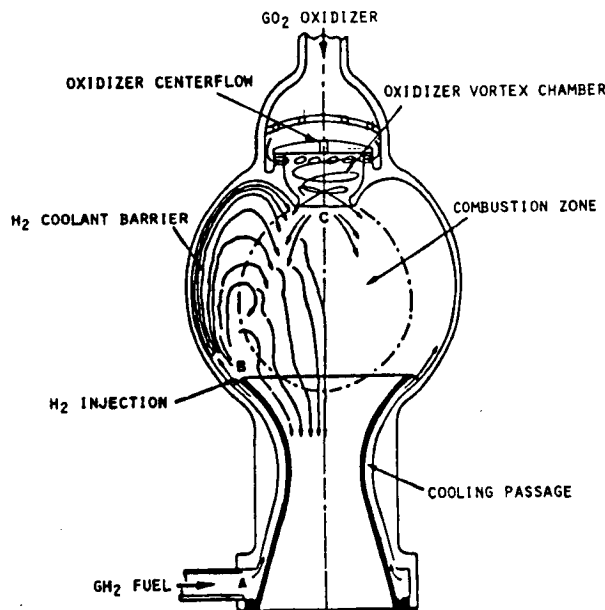


Figure 1. Reverse Flow Thruster

The most recent reverse flow application is for auxiliary propulsion for the Space Station. Because of the interest in both the application and the technology, NASA Lewis Research Center sponsored Bell Aerospace Textron to evaluate the concept at a 50-lbf (222 N) thrust level, assuming that 500,000 lbf-sec (2,224,000 N-seconds) of total impulse would be a viable demonstration of technology maturity and with an additional objective of future demonstrations to two million lbf-sec (8.896 million N-seconds) of impulse. The technology developed for the 1500-lbf (6672 N) thruster engine was, to the extent possible, to be translated directly to the smaller size thruster with the objective of program risk reduction to minimize the time and cost of the demonstration.

Initial test results with the program thruster indicated the earlier 1500-lbf (6672 N) thruster technology was not completely applicable to the 50-lbf (222 N) level. As a consequence, a number of methodical configuration iterations were required before satisfactory operation was achieved. The satisfactory  $r=4$  design operated faultlessly for

a thousand-second demonstration before a change in program priorities imposed a change in mixture ratio from 4 to 8. This new requirement necessitated another hardware iteration with a new chamber/oxidizer injector combination evaluated. This new thruster subsequently demonstrated over 200,000 lb<sub>f</sub>-sec (889,600 N-sec) of successful operation at that higher mixture ratio.

### The 50-lb<sub>f</sub> Thruster Design

The reverse flow thruster designed for this application is shown in Fig. 2. A heavyweight, boltup configuration was chosen to facilitate hardware testing and modification. The basic components of this thruster are the spherical chamber (combustor), the vortex oxidizer swirl cup, the nozzle (including the regen-cooled throat and the fuel inlet) and the nozzle extension. Other components include the spark plug igniters (the exciter and lead are not shown) with auxiliary oxidizer cooling and the propellant valves. Photographs of the test hardware in Fig. 3 show both the components and the chamber assembly. The drawing list for the thruster is included as Table 1.

The fuel inlet and nozzle design is shown in Fig. 4. The propellant enters the nozzle at midsection and is routed aft to enter both the divergent nozzle film coolant

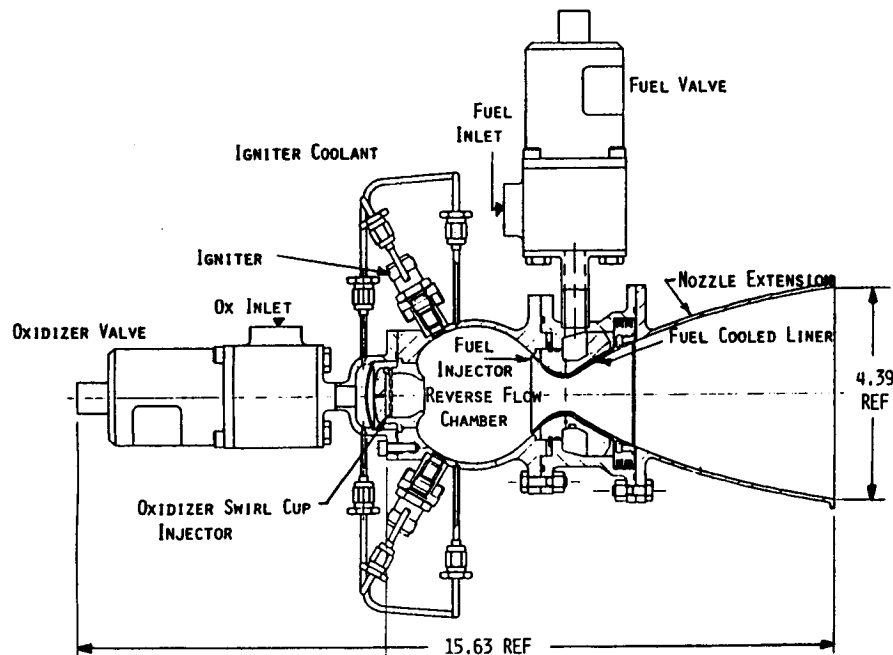


Figure 2. Model 8911 Thrust Chamber

manifold and the nozzle regeneratively-cooled passages. H<sub>2</sub> flows through these cooling passages and out the fuel injection orifices, as indicated in Fig. 4 and Fig. 5. The fuel then passes openly along the spherical chamber wall until turned into the oxidizer stream at the head of the chamber.

The oxidizer flows into the chamber from the valve to the inlet of the vortex cup, through a distribution baffle, and then enters the vortex cup through the swirl orifices and the centerflow orifice. A small amount of oxidizer is drawn from the vortex cup inlet as a spark plug coolant and auxiliary ignition propellant (1/2 percent each igniter).



(Exploded View)

(Assembled)

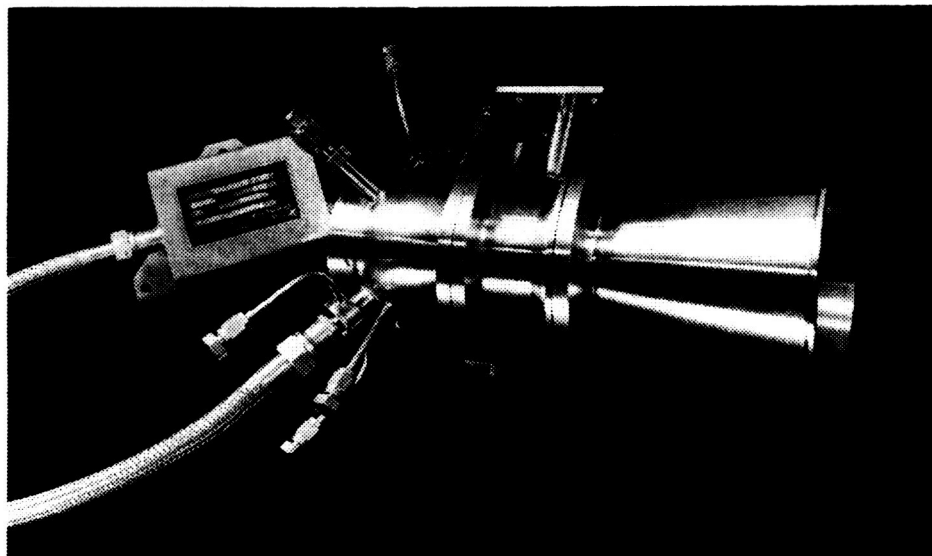


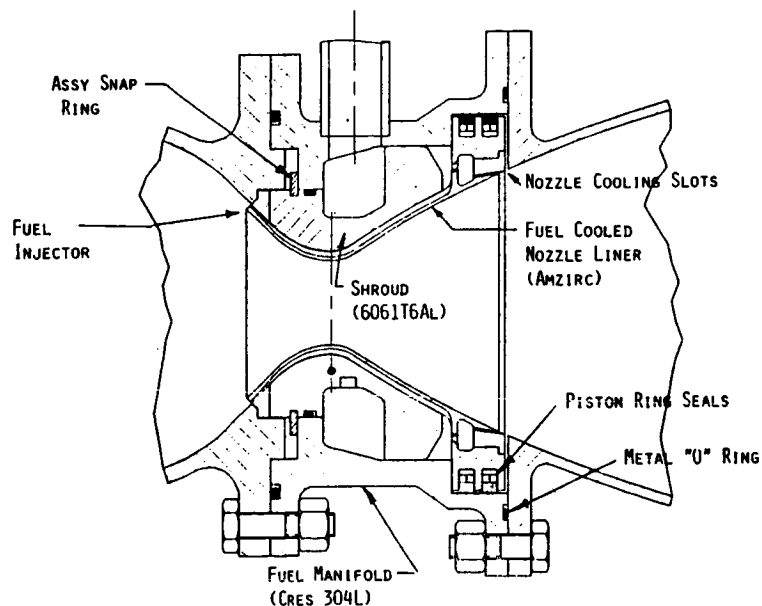
Figure 3. Model 8911 Thruster

The construction materials used for this thruster reflect the objective of incorporating low-cost readily-available materials throughout. The 50-lb<sub>f</sub> (222N) thruster has a Type 304 stainless steel combustion chamber, oxidizer injector and nozzle holder. The throat section (nozzle liner) is fabricated from Amzirc copper and the nozzle shroud (coolant passage closeout) is a wrap-around two-piece Type 6061 aluminum part. The thruster nozzle extension was fabricated from Hastelloy X.

All of the initial testing was conducted with the chamber materials described, although a Hastelloy X chamber was tested when the program objective mixture ratio was changed to 8. The rest of the thruster used the same materials; in fact, the tests used the same nozzle throughout. The difference in the design at  $r=8$  was to increase oxidizer flow, chamber pressure and thrust to allow the same fuel flow in the nozzle for cooling purposes. The turn-around time available to conduct the mixture ratio 8 testing precluded the fabrication of new long lead time nozzle hardware.

**Table 1. Drawing List**

8911-470001	Engine Assembly 50 Lbf - O <sub>2</sub> /H <sub>2</sub>
8911-470002	Nozzle Extension
8911-470003	Coolant/Augmentation Tube Assemblies
8911-470004	Fuel Manifold Assembly
8911-470005	Split Shroud
8911-470006	Nozzle Liner Assembly
8911-470007	Oxidizer Injector Subassembly
8911-470008	Oxidizer Inlet Subassembly
8911-470009	Chamber Subassembly
8911-470010	Chamber Assembly
8911-470011	Igniter Boss Assembly
12350	Wright Components Inc.
FHE 297-1	Igniter
45582	Simmonds Exciter



**Figure 4. Model 8911 Regeneratively Cooled Nozzle**



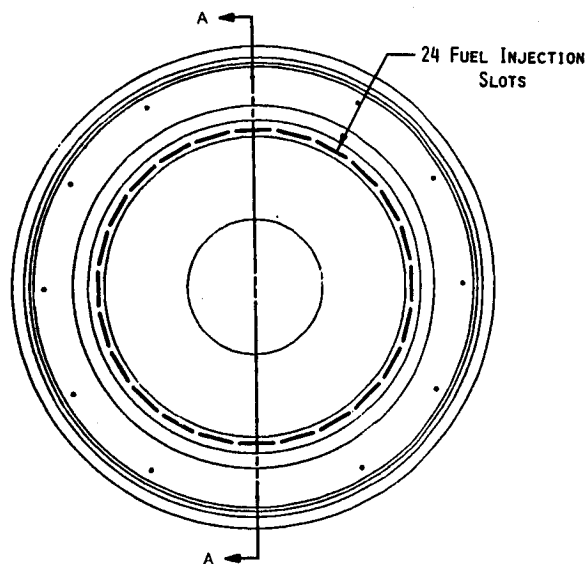


Figure 5. Model 8911 Fuel Injector

The chamber design parameters are listed in Table 2. These parameters are for the mixture ratio 4 design, although the chamber remained the same for later tests conducted at  $r=8$ . The chamber pressure and thrust increased to values of approximately 102 psia ( $70.3 \text{ N/cm}^2$ ) and 77  $\text{lb}_f$  (343 N), respectively, with the increase in oxidizer flow.

Table 2. 50- $\text{lb}_f$  Thrust Design Parameters

Thrust	50 $\text{lb}_f$ (222 N)
$P_c$	75 psia ( $52 \text{ N/cm}^2$ )
$\epsilon$	40:1
Divergent Nozzle Coolant	6% of the fuel
Oxidizer Coolant	
For Spark Plugs	1/2% each
% Bell (Nozzle)	80%
Chamber $L^*$	30 in.
Ignition Frequency	60 sparks/sec at 70 millijoules
Type Ignition	Capacitive discharge
Spark Plug	Champion FHE 297-1
Valve	Wright PN 12350

A further groundrule was to utilize, to the greatest extent possible, the technology developed for the 1500- $\text{lb}_f$  (6672 N) chamber (the last fully developed reverse-flow  $\text{GO}_2/\text{GH}_2$  thruster). A review of this prior program data indicated that a  $1600^\circ\text{F}$  ( $1144^\circ\text{K}$ ) wall temperature in the chamber could be maintained, assuming no reverse scale factor was encountered and that a fuel injection velocity of Mach 0.5 was incorporated. As many of the 1500- $\text{lb}_f$  (6672 N) engine features as possible were retained to create a mini-50- $\text{lb}_f$  version of that engine. The 1500- $\text{lb}_f$  (6672 N) engine features

were used primarily to minimize the risk in obtaining a reasonable performance (better than  $400 \text{ lb}_f\text{-sec/lbm}$  ( $3923 \text{ N-sec/Kg}$ )  $I_{sp}$ ). This criterion proved accurate in obtaining a very high original performance; however, the resultant heat rejection was not quite as predictable and a very overheated chamber wall was initially encountered. As a result, appreciable effort was expended in engineering the thruster to obtain the wall temperatures originally desired. The wall temperatures were eventually reduced to acceptable values and the chamber successfully operated for extended durations. The efforts to accomplish this objective are described in the test results portion of this report.

### Fabrication

One of the benefits of the reverse flow combustor concept is the simple construction techniques used in its fabrication. The uncooled stainless steel chamber, and related parts, which were the baseline for this program, introduced the temperature limitations related to this material. The combustion chamber, oxidizer vortex cup and inlet, and various add-ons such as the spark plug attachments, chamber pressure ports and coolant lines were all fabricated from type 304L stainless steel as was the nozzle manifold assembly.

The most complex portion of this design was the nozzle liner assembly where all the coolant passages were EDM'd. The design feature of holding the nozzle near the fuel injection orifices necessitates a holding flange at this location. This holding flange allowed longitudinal thermal expansion of the liner as with the sliding nozzle seal. The complexity existed in the EDM fuel injection slots which required a compound slot profile to transition from the coolant passage end at the chamber periphery. These injection slots were neatly fabricated by rotating the EDM electrode from the flat fuel injection orifices. This copper nozzle is shown in Figure 6, along with the surrounding aluminum closeout. The coolant passages can be seen along the nozzle axis while the fuel injection orifices are at the top of the unit. This construction technique was selected for this technology demonstration to facilitate both design and fabrication. A flight unit would be modified to include an electrodeposited closeout for the coolant passages, in turn

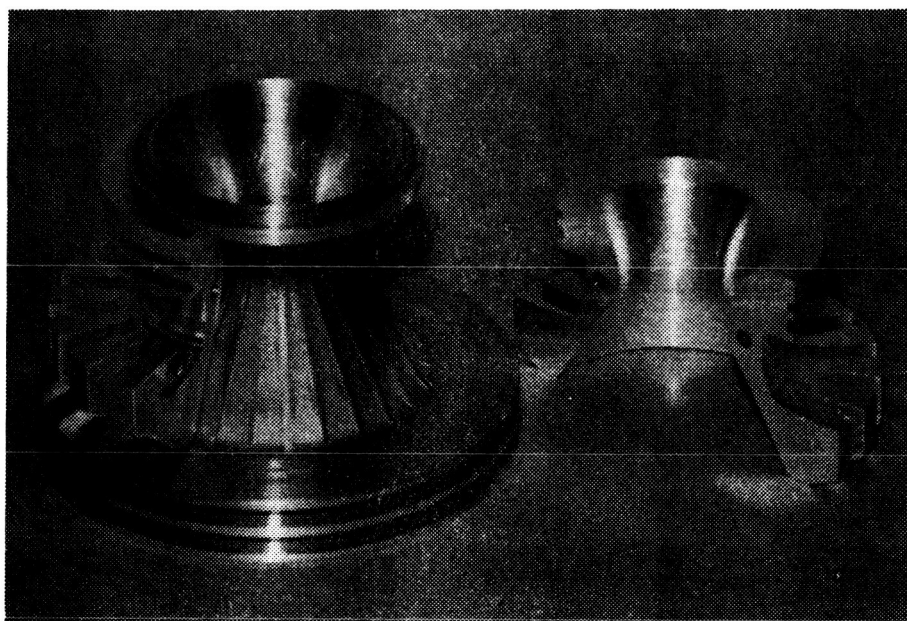


Figure 6. Nozzle Liner with Clamshell Nozzle Shroud

allowing a much less complex configuration of the fuel injection orifices. The time and funding constraints of the present program did not permit such sophisticated fabrication methods.

The final thruster component was the Hastelloy X nozzle extension attached at an area ratio of 10. Hastelloy was selected for the extension so that the possibility of eliminating the nozzle dump coolant could be explored. Due to the press of other objectives, this possibility was not investigated during the present program.

The mixture ratio 8 hardware was similar to the original hardware listed above with the only fabrication change being a Hastelloy X chamber incorporated to allow slightly higher chamber temperatures at the higher mixture ratio. The chamber was fabricated on a normal contour lathe and welding the stainless steel 304L chamber accessories presented no problems. This assembly, ready to be mounted in the test cell, is shown in Figure 7.

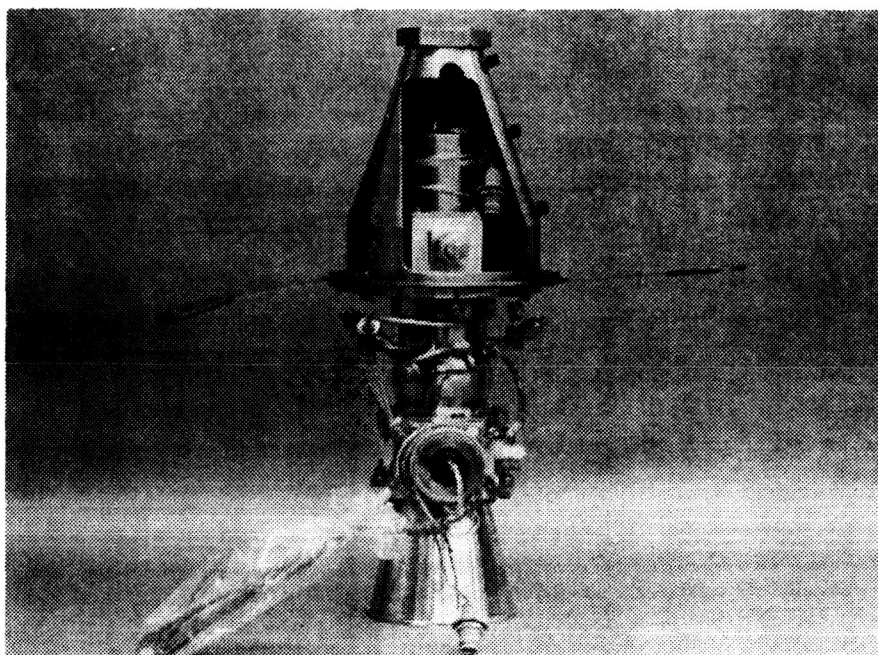


Figure 7. Model 8911 Thrust Chamber Test Assembly

#### Thermal Analysis

The challenge facing the thermal designer is analyzing the large vortex which produces the combustion and the outer fuel "film" which protects the wall from this highly turbulent zone. The heat transfer in this region is extremely difficult to model and even more difficult to measure adequately when attempting to verify any model developed. As a consequence, an "experience factor" was used along with the basic assumption that the 50-lb<sub>f</sub> (222 N) thruster would operate at the same wall temperatures as the 1500-lb<sub>f</sub> (6672 N) thruster and that the existing chamber model could be "adjusted" with geometric corrections. This assumption proved to be inaccurate during the initial testing of the 50-lb<sub>f</sub> (222 N) thruster and led to the immediate recognition that the "scale" factor was probably tied directly to the hydrogen film thickness and that a more complete model was needed if this combustor was to be described analytically. Development of such a model was considered to be beyond the resources of the present

program, so a test program of methodical oxidizer injection variations was conducted to achieve chamber operation in the desired temperature range. The technique was to adjust the oxidizer centerflow to allow a decreased vortex combustion mixture ratio\* and consequent lower combustion temperature. In effect, a third zone was introduced where the three zones are: (1) outer  $H_2$  reverse flow film, (2) the vortex combustion area consisting of the fuel and the oxidizer vortex flow, and (3) a central zone of oxidizer-rich injection. This general combustor model was then used to evaluate the various changes made, including the rather extreme case of operation at  $r=8$ .

The rest of the thrust chamber yielded to analysis by more conventional heat transfer models. The regeneratively cooled nozzle was examined by methods attributed to Eckert and Drake<sup>6</sup> resulting in the wall temperature prediction shown in Figure 8. A thermocouple was inserted in the test hardware at approximately the maximum temperature location and nozzle metal temperature recorded at that station.

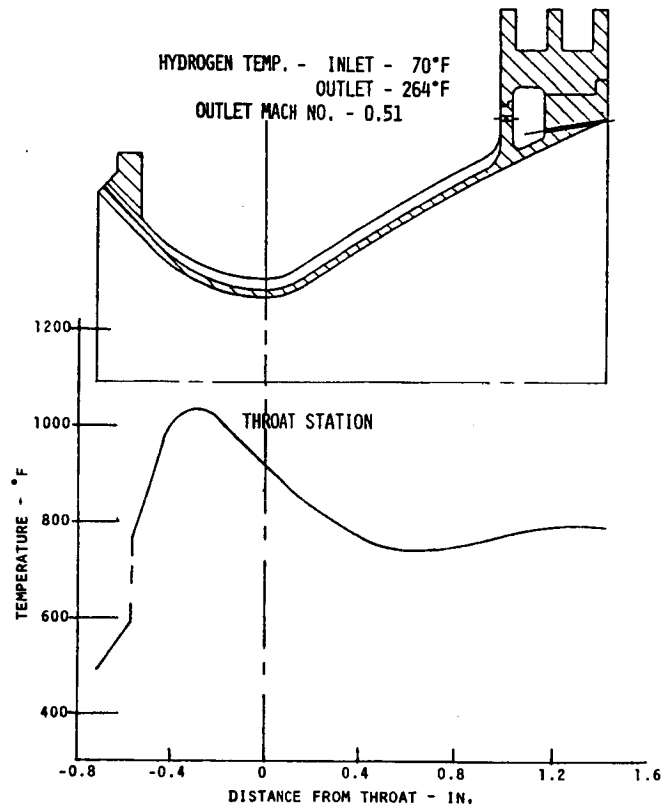


Figure 8. Regenerative-Cooled Amzirc Liner Inner Surface Temperature

The nozzle extension was also examined with operating conditions similar to the 1500-lb<sub>f</sub> (6672 N) engine. This extension used a small amount of fuel dump cooling to reduce the temperature at the aft flange seal area and on the extension itself. The results are presented parametrically in Figure 9. As a result of this analysis, a design which incorporated 6% of the fuel as nozzle cooling was selected to keep the expected nozzle extension temperature to less than 2000°F (1367 °K).

\*The mixture ratio results from the oxidizer vortex flow and the  $H_2$  film.

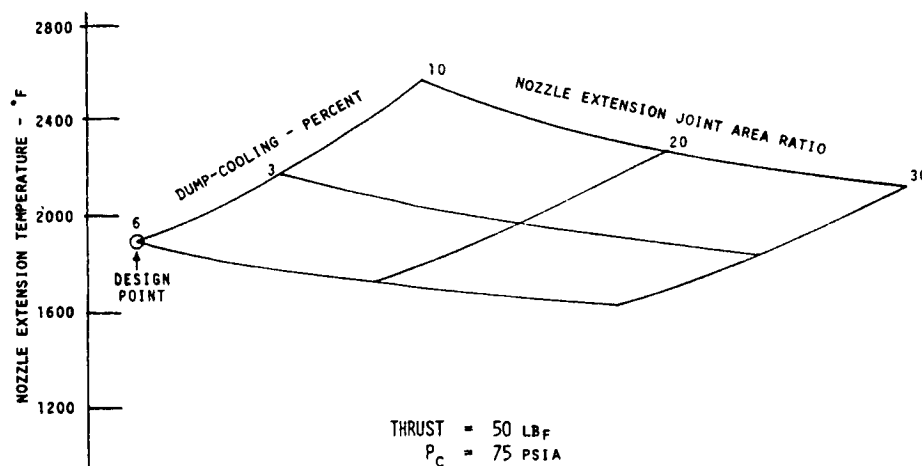


Figure 9. Dump-Cooled Nozzle Extension Maximum Temperature

### Performance

Performance for this thrust chamber was estimated via the Standard JANNAF One Dimensional Equilibrium Methods, assuming that the combustion efficiency would be approximately 96%. The resultant parameters are as shown in Table 3. No attempt was made to predict the effects of propellant interactions in the mixing region other than to assume the 96% combustion efficiency. This assumption proved to be a good one in subsequent testing, as the initial test configuration exceeded the predicted  $I_{sp}$  number by approximately 1%.

Table 3 - BAT Model 8911 Performance Prediction

#### ENGINE PARAMETERS

Thrust	50 lb <sub>f</sub>	(222 N)
Chamber Pressure	75 psia	(52 N/cm <sup>2</sup> )
Nozzle Area Ratio	40:1	

#### LOSSES

Divergence Loss	1.2%	
Kinetic Loss	1.2%	
Boundary Layer Loss		
(Drag + Displacement)	2.9%	
Dump-Coolant Loss	0.6%	
Energy Release Loss	4.0%	
	9.9%	
Theoretical $I_{sp}$ , lb <sub>f</sub> -sec/lbm	473.3	(4643 N-sec/Kg)
Expected $I_{sp}$ , lb <sub>f</sub> -sec/lbm	426.8	(4187 N-sec/Kg)

### Test Objectives

The primary objective of the original test program was to accumulate 500,000  $\text{lb}_f\text{-sec}$  (2,224,000 N-seconds) impulse at a mixture ratio of 4. High performance was specifically not a contractual objective; however, 400  $\text{lb}_f\text{-sec/lbm}$  (3923 N-sec/Kg)  $I_{sp}$  was defined as a goal. The design objective was to understand and define a method of managing wall temperatures to produce an indefinite chamber life using standard construction materials. As the program progressed, the major emphasis was placed on achieving the limited wall temperatures required for long life. Thruster operation with stable wall temperatures was eventually demonstrated in a 1000-second duration firing with the hardware in excellent condition post-test. Schedule and funding constraints precluded further operation with this  $r=4$  configuration. The program was then modified to demonstrate 200,000  $\text{lb}_f\text{-seconds}$  (889,600 N-seconds) at a mixture ratio of 8. This was accomplished during a one and a half-month effort, which included design, fabrication, and testing of the modified thruster.

### Test Cell and Operation

All fire-testing of the Space Station Auxiliary Thruster was conducted in the Bell altitude facility A-2. The test cell used has a nominal altitude capability of 120,000 feet (36576 M) with a duration capability far in excess of 1000 seconds. The Bell altitude facility is operated by a dedicated steam generation system tied in with our factory power plant, providing low-cost operations of almost unlimited duration. The general arrangement of the facility is shown in Figure 10.

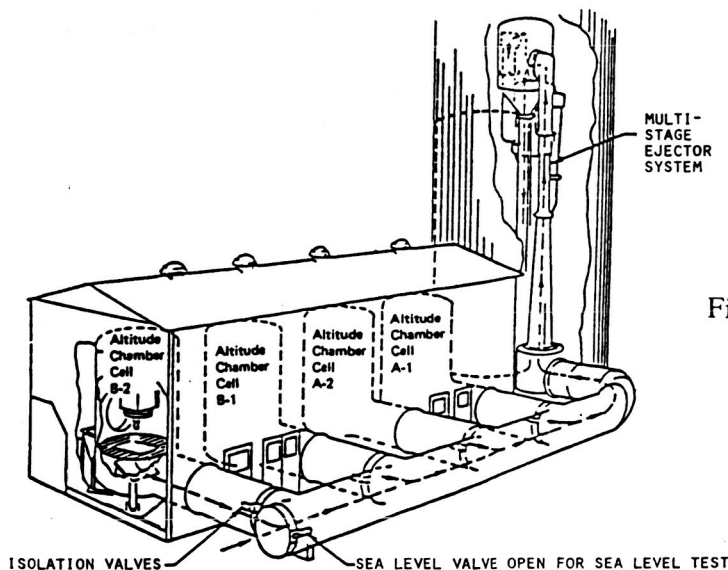


Figure 10. Altitude Test Complex

Operation of any test cell is accomplished by directing steam into one of the three ejectors, each having its own capacity limit. The test cell closure valve is opened to the ejector exhaust system, drawing the cell down to the requisite altitude.

Operation of the thruster is accomplished by a timer panel. The start and shutdown sequence of events to the igniter and valve systems are preplanned and operate in an automatic sequence. For these tests, the fuel valve was sequenced to open one millisecond ahead of the oxidizer valve, although no confirmation measurements were attempted to ascertain the propellant chamber entry sequence.

Ignition was accomplished with the use of an exciter, having an approximate frequency of 50 sparks per second, operating a spark plug installed in the combustor wall. Examination of the start traces showed positive and immediate starts with the first spark after positive oxidizer pressure was identified.

### Instrumentation

Normal performance measurement parameters, including thrust, chamber pressure and propellant flow rates, were measured for all tests. Flow rates were measured using temperatures and sonic orifices. Cell instrumentation includes an in-line load cell thrust measuring arrangement where the thrust chamber is mounted vertically and fired in a downward direction. Three stabilizing webs were used on the chamber mount so that thrust alignment was maintained.

Temperatures were measured with thermocouples placed at various positions on the chamber. Since there has been very little precedent for failure criteria for this type of thrust chamber, thermocouples were placed at various positions on the chamber to establish criteria for the formulation of a more complete heat monitoring arrangement. Thermocouples were placed on the nozzle extension, at the nozzle flange, on one of the lands in the copper nozzle liner, in a coolant passage and on the combustion chamber at a variety of positions. The initial test results showed that the high temperatures were at the midpoint of the spherical chamber. To monitor subsequent results or design changes, four thermocouples were continuously monitored at the chamber midpoint. These chamber temperatures were used to determine the magnitude of temperature changes as well as circumferential temperature distribution.

### Test Limitations

Initial testing indicated that almost any sequence of tests could be readily accomplished within the test cell, until long durations were attempted. The initial long duration tests showed that the ejector system was not adequate for complete purging of exhaust gases, and recirculation back into the cell resulted. This recirculation resulted in some overheating which eventually affected instrumentation. After the initial 1000-second test, a supplementary exhaust duct with a duration limit of 300 seconds was installed and used for all subsequent long duration tests. Even with this modification, testing of the mixture ratio 8 hardware resulted in cumulative heating in the duct when rapid repeats of long duration tests were made. This heating did not appear to affect the thruster operation in any way but it did result in some questionable test measurements.

These questionable test measurements were mostly due to loss of signal in the test cell when connectors and transmission wiring was effected by the heating. As an example, much of the data from Test A2-4359 was lost when the wiring was effected by the heating. This was also true of the later tests during the 10 run duration series on the mixture ratio=8 hardware.

### Test Results and Discussion

The results of the initial testing were quite satisfying in that the performance met or exceeded the values originally predicted. This achievement was particularly satisfying due to the concern that the design might not be correct when reducing the features of the 1500-lb<sub>f</sub> (6672 N) thruster.

While measured performance was as predicted, chamber heating was substantially higher than anticipated and high enough to compromise operation with the "uncooled" Cres hardware. The 1500-lb<sub>f</sub> (6672 N) chamber had produced a maximum wall temperature of approximately 1600°F (1144°K) and that value was used as a basis for the 50-lb<sub>f</sub> (222 N) thrust design. Initial test results indicated an equilibrium temperature of 1995°F (1364°K) was more probable and approximately 2400°F (1589°K) was anticipated, operating at a mixture ratio of 5. The initial test results compared to predicted are as shown in Table 4.

Table 4. Initial Thruster Test Results

	<u>Program Requirement</u>	<u>r=4 Predicted</u>	<u>Test Results</u>	<u>r=5 Expected</u>
F, lbs	50 (222 N)	50 (222 N)	48.65 (216 N)	-
P <sub>c</sub> , psia	75 (52 N/cm <sup>2</sup> )	75 (52 N/cm <sup>2</sup> )	70.8 (49 N/cm <sup>2</sup> )	-
I <sub>sp</sub> , lb <sub>f</sub> -sec/lbm	400 (3923 N-sec/Kg)	426.8 (4187 N-sec/Kg)	430.3 (4421 N-sec/Kg)	-
Metal Regen. Temp. Max, °F	-	1030 (828°K)	1018 (821°K)	-
Chamber Temp., °F	-	-	1584* (1136°K)	-
Predicted Chamber Temp. at Stabilization, °F	-	1600 (1144°K)	1995 (1364°K)	2400** (1589°K)

\* Not tested to thermal stabilization

\*\* Estimated on basis of r=4 test.

One obvious result of the initial testing was the need to reduce the chamber wall temperature without losing any more performance than necessary. The method selected was to modify the orifices in the swirl cup and the centerflow in the oxidizer cup. Changing the swirl cup orifices changes the oxidizer swirl emission angle from the oxidizer cup according to the relation:

$$\alpha = f\left(\frac{D_1 D_2}{A_s}\right) = f(K)$$

where  $\alpha$  is the cone angle, ( $D_1$ ) the swirl/cup diameter, ( $D_2$ ) the swirl cup exit diameter and  $A_s$  the tangential flow injection area (Figure 11). It was assumed that a decrease in cone angle would decrease the degree of interaction between the vortex and fuel film, hence increasing its integrity on the wall. Since  $\alpha$  decreases as the value of  $A_s$  increases, the first modification to the oxidizer vortex cup was to increase the number of vortex orifices. On this first modification (Figure 11, Interim Ox Cup), no change was made to the centerflow orifice.



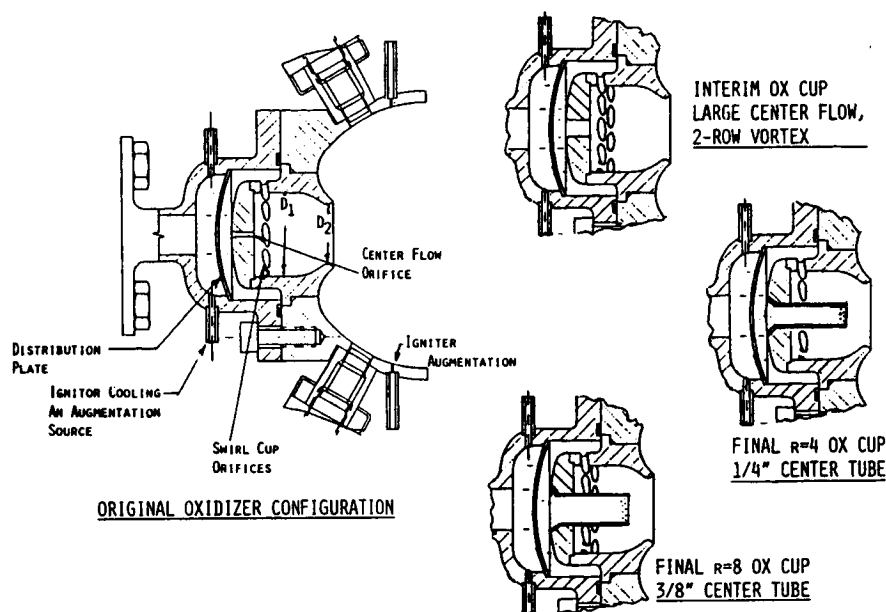


Figure 11. Model 8911 Oxidizer Vortex Cup Configurations

The improvement in wall temperature from this first modification was modest at best with only a few degrees improvement in wall temperature. Further changes in  $A_s$  were considered inappropriate as the pressure drop in the oxidizer cup would become too low for any stabilization of flow. As a consequence, the next variable investigated was the centerflow.

Three increases in size to the centerflow orifice were made with significant results. The first change was to increase the centerflow to 10% of the oxidizer with a resultant performance and wall temperature decrease. This success led to two more immediate modifications, including a 25% centerflow and further to a 33% centerflow. The 25% centerflow showed a significant improvement but the 33% centerflow change did not result in the continued temperature trend (Table 5).

Table 5. Test Results: Oxidizer Cup Configuration Modifications

Config- uration	Center- Flow	No. of Vortex Orifices	Center Tube	$I_{sp}$ lb <sub>f</sub> -sec/ lbm	Kg	Temp. °F	°K	Time to Temp. Sec
1	3.46%	10	None	430.3	(4221)	1584	(1136)	10
2	2.53	20	None	433.8	(4256)	1648	(1171)	11
3	10.3	20	None	436.9	(4286)	1629	(1161)	12
4	25.1	20	None	417.3	(4094)	1667	(1182)	30
5	33.0	20	None	413.1	(4053)	1648	(1171)	30
6	43.9	10	None	410.2	(4024)	1661	(1178)	30
7	41.4	10	1/4" tube	398.3	(3907)	1491	(1084)	30
8	41.4	10	1/4" tube	397.9	(3903)	1572.3	(1129)	30
9	41.4	10	1/4" tube	399.5	(3919)	1588	(1138)	1000-sec. run
10	47.4	20	3/8" tube	376.3	(3692)	1277	( 965)	Stabilization

The temperature results of the 33% centerflow tests showed that the temperature control effects of increasing the centerflow were limited and ineffective over 25%. Apparently, the temperature control was negated by the increased interactions between the oxidizer vortex and centerflow. The oxidizer from the centerflow orifice may have been expanding into the vortex at the minimum section ( $D_2$ ), thus reducing the separation of the two flow regions.

To provide the required greater oxidizer centerflow without interactions with the vortex flow, a 1/4-inch (.64 cm) tube with a 0.020-inch (.05 cm) wall was installed to contain and direct the centerflow. The first tube evaluated was 0.8 inch (2 cm) long and extended to the minimum section of the oxidizer vortex cup. This modification was tested and the results were significant in that performance and temperatures were close to anticipated values and the temperature "distribution" of the wall was improved. This tube burned back approximately 0.13 inch (.33 cm) during the tests, indicating a hot gas circulation in the region and that the tube length could not be maintained. Two additional tube lengths were investigated, both shorter; the first with no end orifices, and the second a 0.6-inch (1.52 cm) long tube with twenty-four 0.020-inch (.05 cm) diameter holes to protect the end from hot gas-induced deterioration. This second tube version was so successful that it was selected as the configuration which was installed and operated for 1000 seconds continuously (Figure 11, Final  $r=4$  Ox Cup). The performance ( $I_{sp}$ ) related to the changes made in the oxidizer cup is shown graphically in Figure 12. Also included in this chart is the data taken using the mixture ratio 8 hardware when tested at  $r=4$  (Figure 11, Final  $r=8$  Ox Cup).

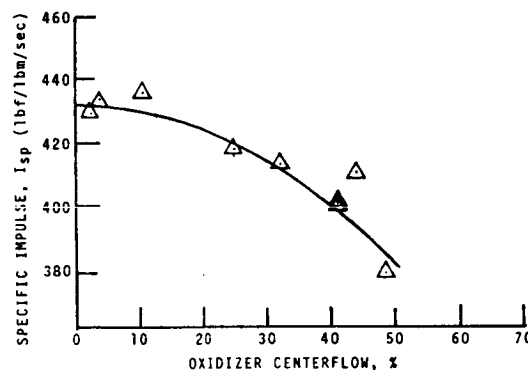


Figure 12. Specific Impulse versus Oxidizer Centerflow %

The final version of the mixture ratio 4 test hardware is shown firing in the test cell in Figure 13. The data from this final test configuration was recorded as follows (Table 6):

Table 6. Test Operating Data for  $r=4$  Thruster

F	51.48 lb <sub>f</sub> (229 N)
$P_c$	74.9 psia (51.6 N/cm <sup>2</sup> )
$I_{sp}$	397.2 lbf-sec/lbm (3896 N-sec/Kg)
Metal Regen. Temp., Max.	885°F (747°K)
Chamber Temp.	1581°F (1134°K)

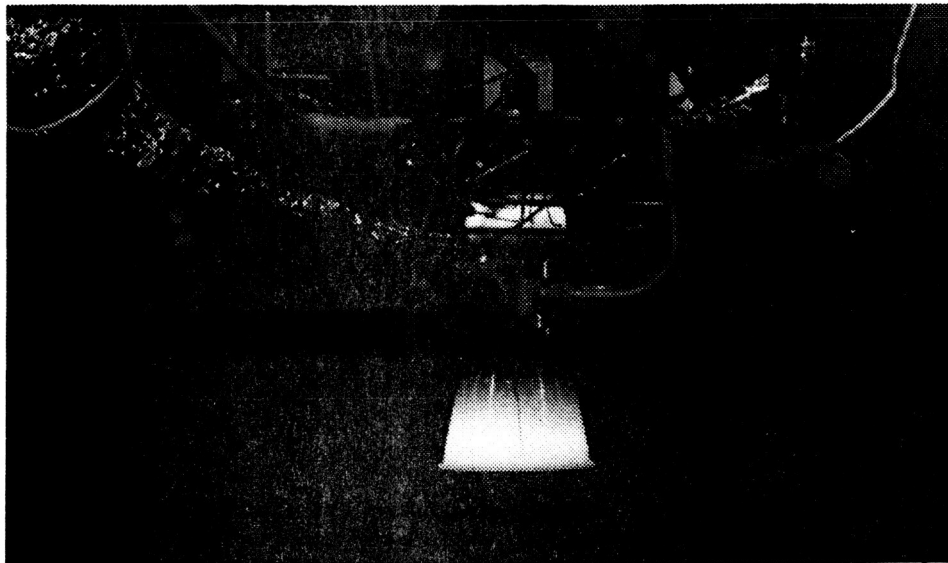


Figure 13. Model 8911 Thruster Firing in Test Cell A-2

At approximately the time of the  $r=4$ , 1000 second demonstration, program priorities changed to indicate a demonstration at  $r=8$  to be more important than continued duration testing of the  $r=4$  hardware. As a consequence, the experimental program was redirected to the demonstration of a thruster at a mixture ratio of 8. New hardware was fabricated: the oxidizer cup, cap and new chamber. The original nozzle was retained with the ground rule that the fuel flow would remain constant to cool the regen. nozzle. The proper mixture ratio was obtained by increasing the oxidizer flow (and total weight flow).

The oxidizer cup dimensions for the two mixture ratio designs are given in Table 7.

Table 7. Oxidizer Cup Parameters

	<u><math>r=4</math></u>	<u><math>r=8</math></u>
Rated Flow $O_2$	0.0984 lbm/sec (.0446 Kg/sec)	0.1968 lbm/sec (.0893 Kg/sec)
Vortex Orifice	10 x 0.085 in. dia. (.216 cm)	20 x 0.085 in. dia. (.216 cm)
Centerflow Orifice	0.21 in. dia. (.533 cm)	0.335 in. dia. (.851 cm)
$D_1$	0.9 in. dia. (2.286 cm)	1.1 in. dia. (2.794 cm)
$D_2$	0.6375 in. dia. (1.619 cm)	0.608 in. dia. (1.544 cm)

Testing of the mixture ratio 8 hardware was conducted within an extremely short time span with the entire program priority devoted to the demonstration of 200,000  $\text{lb}_f\text{-sec}$  (889,600  $\text{N-sec}$ ) impulse at a mixture ratio of 8. This objective was accomplished in several days of testing with the hardware remaining intact through the repetitive 300-second tests.

A problem did exist in achieving the mixture ratio 8 data. When initially assembled, the new Hastelloy chamber was slightly undersize and distorted some of the fuel injection orifices in the copper nozzle. This discrepancy was not discovered until after the initial mixture ratio 8 test series when the hardware was removed for examination. The copper nozzle was reworked in a manner to repair the fuel orifice and also allow clearance for the chamber installation.

In all, ten 300-second tests were conducted with several shorter tests for preliminary evaluation. The performance in these tests remained virtually constant as indicated in Table 8. The data presented is considered the most representative for the hardware. Performance at 29.4 seconds is considered the most accurate for performance unaffected by the test cell. The 300-second temperature is considered representative although very little hardware temperature change was noted after thermal stabilization in the 15 to 30 second time period.

Table 8. Test Data Operating at  $r=8$   
(Data at 29.4 sec)

Run No.	Mixture Ratio	F ( $\text{lb}_f$ )	(N)	Isp ( $\text{lb}_f\text{-sec/lbm}$ )	(N- sec/Kg)	Wall Temp. at 300 Sec. T.C. #11		Test Duration Sec
						$^{\circ}\text{F}$	$^{\circ}\text{K}$	
4368	7.924	76.58	340.6	346.0	3394	1397	1032	300
69	7.920	75.24	334.7	340.1	3336	1498	1088	300
70	7.912	76.93	342.2	347.7	3411	1499	1088	300
71	8.024	76.87	341.9	339.7	3332	1499	1088	300
72	8.074	78.91	351.0	346.5	3399	1458	1066	300
73	7.972	76.81	341.6	340.3	3338	1481	1078	300
74	7.940	76.26	339.2	340.2	3337	1472	1073	300
75	7.971	78.14	347.6	345.3	3387	1500	1088	300
76	7.957	76.87	341.9	342.2	3357	1496	1087	300
77	8.034	78.15	347.6	346.7	3401	1511	1095	300

Once started, this test series was conducted without incident. In fact, operation of the thruster could almost be called casual in that it could be run, shut down or restarted at will with totally uncomplicated procedures. Compared with bi- or mono-propellant storable propellant operation, testing was totally uncomplicated, with the elimination of intermediate purges, cleaning and storage difficulties.

Again, the thruster outlasted the test cell instrumentation; a new exhaust duct was installed in the test cell between the 1000-second mixture ratio 4 test and the installation of the new  $r=8$  hardware. While the new test duct helped immensely, some blowback still existed and heating in the cell occurred. This test cell heating had no discernible effect on the operation of the hardware but the resulting test data appeared to be affected by the ambient temperature rise during the rapid fire test sequence. It would appear that a more leisurely test schedule would provide less data variation, although recalibration of applicable parameters did not prove conclusive in providing suitable data corrections corresponding to temperature changes.

After completion of the long duration testing, a second series of tests was made to operate over the projected possible operating range of  $r=3$  to  $r=8$ . The results of this testing are shown in Fig. 14 and Fig. 15.

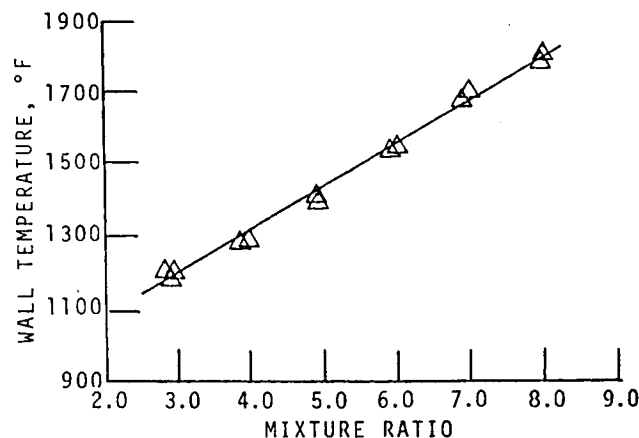
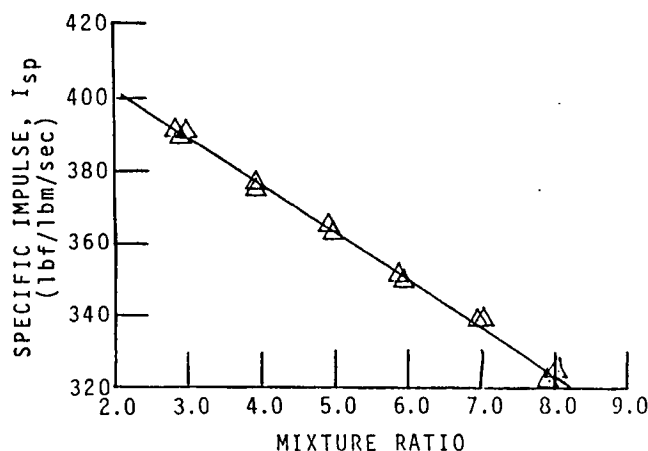


Figure 14. Specific Impulse versus Mixture Ratio      Figure 15. Wall Temperature versus Mixture Ratio

In essence, this data graphically illustrates the problem in design for the high mixture ratios where a loss of approximately 50  $\text{lb}_f\text{-sec/lbm}$  ( $491 \text{ N-sec/Kg}$ )  $I_{sp}$  is accompanied by a  $500^\circ\text{F}$  ( $533^\circ\text{K}$ ) increase in wall temperature going from a mixture ratio of 4 to a mixture ratio of 8. On the other hand, an extreme range of capability is illustrated for the Bell thruster in operating over this entire range.

### Thruster Ignition

The ignition system used for this thruster was a copy of the system previously developed at Bell for the 1500  $\text{lb}_f$  (6672 N) engine on NASA Contract NAS 3-14353. This prior effort indicated the desirability of a capacitive discharge system in producing a consistent higher energy spark at the spark plug. It was also desired to have a relatively higher spark rate of 200-240 sparks/second to minimize the time between valve open and ignition. Unfortunately, most capacitive discharge exciters have a rate substantially less than this desired rate which is more than sufficient to produce sparks at a rate for starting aircraft engines. The increased rate would also be sufficient to start this engine, but not to make rapid and repeated pulses. It was also found that the experimental exciter used on the 1500  $\text{lb}_f$  (6672 N) development was unavailable and the records that produced the limit had been misplaced.

A reasonable exciter compromise for the program resulted from a modified Simmonds jet engine exciter which could produce as many as 50 sparks/second. The exciter was modified to produce the higher pulse rate by reducing the stored energy of the production exciter; thus increasing the rate. The exciter parameters were as shown in Table 9.

The dual spark producing systems were used in all testing. Each system consisted of a Simmonds 45582 Exciter, a shielded lead to the spark plug and Champion FHE 297-1 spark plug. Each ignition system was operated from a 28 volt power supply and no attempt was made to synchronize or phase the spark pulse.

Table 9. Model 8911 Ignition System Exciter  
Simmonds Model 45582 Exciter

Exciter Parameters

Input Voltage	14 - 30 VDC
Spark Rate	15/Sec @ 14 VDC 50/Sec @ 30 VDC
Stored Energy	250 Millijoules
Output Energy	70 Millijoules
Duty Cycle	Continuous
Operating Temperature	-67° to 250°F

The result of this ignition system was the production of approximately 80 sparks/second in the thruster, although because of the lack of synchronization, the sparks may not be evenly spaced. Two examples of the spark output can be seen in Figures 16 and 17. The spark occurrence is shown as the peak on the trace "spark current (I)." The randomly different occurrence time for the two ignition systems can be seen as the closely spaced sparks of Run 4323 (Figure 16) and nearly even spacing of Run 4325 (Figure 17).

The start, for each test, occurred as the oxidizer entered the chamber. Data was examined for rapidity of starts and occurrence. The start was found to be problem-free. Starts in each case appeared at the first spark after the oxidizer was known to enter the chamber. From the data examined, the time for the valve open-to-oxidizer chamber pressure occurrence was approximately 4 milliseconds. From this start examination logic, it was also deduced that a 4 millisecond start would be expected if a 200 sparks per second exciter were used with the thruster valve system of the current design.

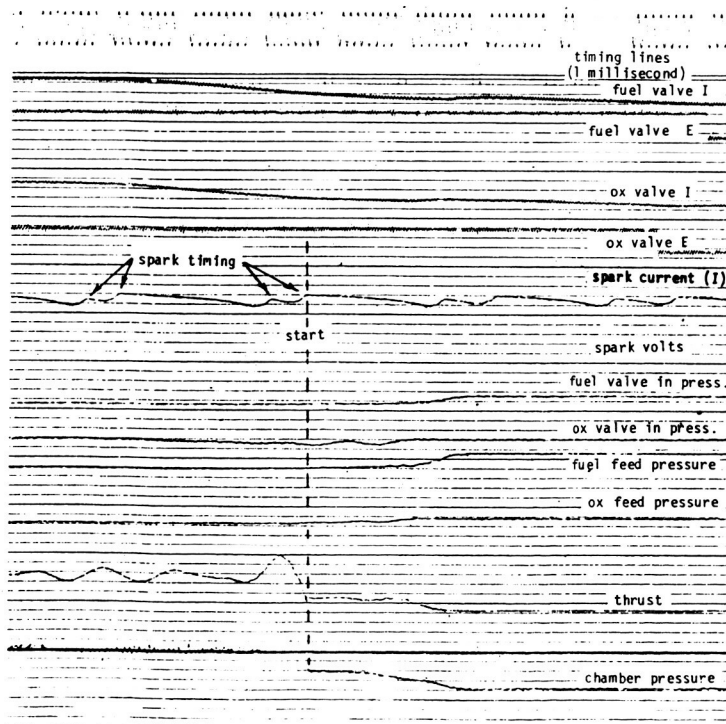


Figure 16. Start - Test No. A2-4323

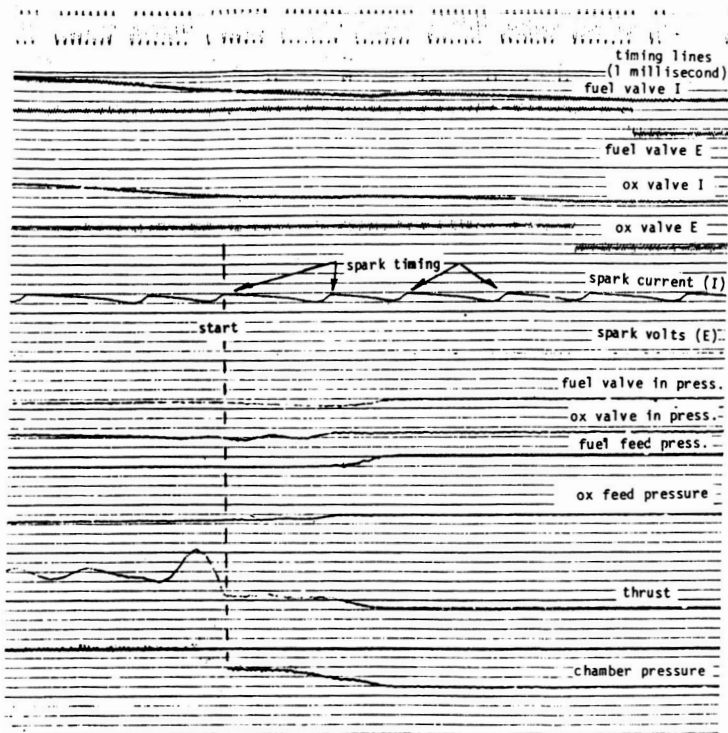


Figure 17. Start - Test No. A2-4325

Other timing values, such as a spark delay of 20 to 30 ms, did not appear to have a significant effect on the chamber start.

Another start parameter examined was the chamber pressure at which ignition occurred in the chamber. Interestingly, the chamber pressure on start was in the 32 to 34 psia range. This pressure is substantially higher than expected, although no initial assessment of this parameter was made for the program. The significance of this higher pressure is that a much reduced spark energy could be used for ignition. Previous references, Pratt & Whitney, PWA FR-303 "RL10 Torch Ignition System" and E.L. Richfield "Spark Ignition" AFAL-TR-68-290, Bureau of Mines, would indicate spark energy requirements for ignition substantially below those for the capacitor used on this program. This in turn would imply that the capacitor could be modified to increase the spark rate without violating the spark plug spark energy requirement.

## Conclusions

This experimental evaluation program has identified reverse flow thruster configurations which will operate for extended firing times using  $\text{GO}_2$  and  $\text{GH}_2$  as propellants. The 1000-second test using mixture ratio  $r=4$  hardware and the 250,000  $\text{lb}_f$ -second (1,112,800 N-seconds) impulse operation of the mixture ratio  $r=8$  hardware have shown that the thruster concept is capable of extended operation and can operate with simple controls.

The program also was successful in identifying a mechanism for control of wall temperatures, contributing a positive design parameter when performance and wall temperature adjustments may be required. The capability of controlling wall temperatures by varying the central oxidizer core flow was demonstrated with reductions in temperatures from above  $2000^\circ\text{F}$  to  $1300^\circ\text{F}$  ( $1367$  to  $978^\circ\text{K}$ ) through systematic increments of oxidizer flow increase to the central core. This capability to adjust the wall temperature led to the consideration of a combustion model which could be likened to the zonal regions of combustion in more conventional film or barrier cooled designs. Such a model was considered, but its development was deemed to be beyond the resources of this program.

The final test results also demonstrated the thruster's capability to operate over an extremely wide range of mixture ratio in almost a linear fashion. This is a measure of the thruster's capability to operate at the highest mixture ratio desired and then accommodate downward adjustments. Cooling and performance are both improved as the mixture ratio becomes more fuel-rich.

The success of the simple ignition system used was also a positive factor. This igniter system appears to be more than adequate for Space Station Auxiliary propulsion, where rapid pulsing is not a requirement.

Finally, this design can be made completely from "non-strategic" materials. The capability to operate with an uncooled stainless steel combustor was verified and, even when a Hastelloy X chamber was substituted, the combustion wall temperatures achieved would allow non-strategic material to be used for all components.



### References

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## Appendix A

### Test Data

#### A. Performance Data

All tests were performed in Test Cell A-2 at a simulated altitude of approximately 100,000 ft. (30480 M). The thruster was mounted vertically downward in the test cell and the exhaust from the thruster was directed into a steam ejector. Performance measurements were recorded on FM tape with data points processed at requested intervals. The primary performance measurements of thrust, chamber pressure and flows were recorded using a transducer incorporated in-line load cell, a Taber Model 2210 transducer, and with pre-calibrated cavitating venturies for the respective measurements.

The accompanying data sheets are a summation of all data taken through the program. The performance data summaries have been compiled to include the performance as recorded.

The data sheets are mostly self-explanatory except for several 0.0 values that are consistently recorded as the result of unedited values from a previous printout form. Appropriate temperature data for each run is also included. Chromel-Alumel thermocouples were used for all the temperature values.

It may be noted that some data was lost, particularly during long duration firings. The lost data is the result of overheating in the test cell which in most cases effected the data transmission lines and connectors. The data parameter and the obviously erroneously recorded values are included as recorded.

#### B. Hardware Configurations

Due to the investigative nature of this program, many modifications of the hardware were incorporated. The following chart (Figure A-1) indicates the configurations tested with the test numbers for each configuration.

#### C. Thermocouple Installation

The location of the wall temperature recording thermocouples installed on the test hardware is shown in Figure A-2. The thermocouple numbers shown correspond to the numbers on the test data sheets. The only change in the thermocouple arrangement was made when the nozzle exit thermocouples were moved to a mid-chamber location after test A2-4346. These thermocouples were then designated as Nos. 20A and 21A. The "A" indicating the chamber mid-location position. The two internal thermocouples installed were to measure a nozzle coolant land temperature (NLT) and the H<sub>2</sub> gas, fuel coolant temperature (FCT) at the exit of the regenerative portion of the cooled nozzle. This installation was made by inserting .014 inch coaxial thermocouples through the fuel manifold and cementing the thermocouples in place. This arrangement appeared to operate quite well during the testing of the mixture ratio = 4 testing, however, data from the r=8 testing does not appear valid at all. It is assumed that both thermocouples were damaged in some manner during the removal rework and reinstallation of the nozzle for the r=8 testing.

Figure A-1  
8911 Hardware Configuration

R=4 Test Hardware

Config.	A-2 Test No.	Center Flow Dia. In. (cm)	No. Vortex Orifices		Remarks
			.085" .216 cm Dia.	.065" .265 cm Dia.	
1	4322-4328	.050 (.127)	10	0	Uncooled P <sub>c</sub>
	4329-4332	.050 (.127)	10	0	Cooled P <sub>c</sub>
2	4333-4336	.050 (.127)	10	10	
3	4337-4338	.1015 (.258)	10	10	
4	4339-4343	.182 (.462)	10	10	
5	4344-4346	.221 (.561)	10	10	
	4347	.221 (.561)	10	10	Add thermocouples 20A & 21A, Ox Valve Rotated 90°
	4348	.221 (.561)	10	10	
	4349	.221 (.561)	10	10	Ox Valve & Ox Inlet Rotated 180°
6	4350	.221 (.561)	10	0	Inlets per Original
	4351-4352	.221 (.561)	10	10	Fuel Inlet Rotated 180°
7	4353-4355	1/4" Tube (.635 cm) .8" Long (2.03 cm)	10	0	Inlets per Original Tube Eroded .130"
8	4356	1/4" Tube (.635 cm) .55" Long (1.40 cm)	10	0	Tube End Appeared Hot
9	4357-4359	1/4" Tube (.635 cm)	10	0	16-.020" Dia. Tube
		.6" Long (1.52 cm)	10	0	Coolant Holes

R=8 Test Hardware

1	4360-4366	3/8" Tube (.953 cm) .6" Long (1.52 cm)	10	10*	Fuel Injection Orifices Damaged on Installation 24-.020" Dia. Tube Coolant Holes
	4367-4393	"	10	10*	Fuel Injection repairs

\*.085 Dia. Holes (all holes in R=8 hardware)

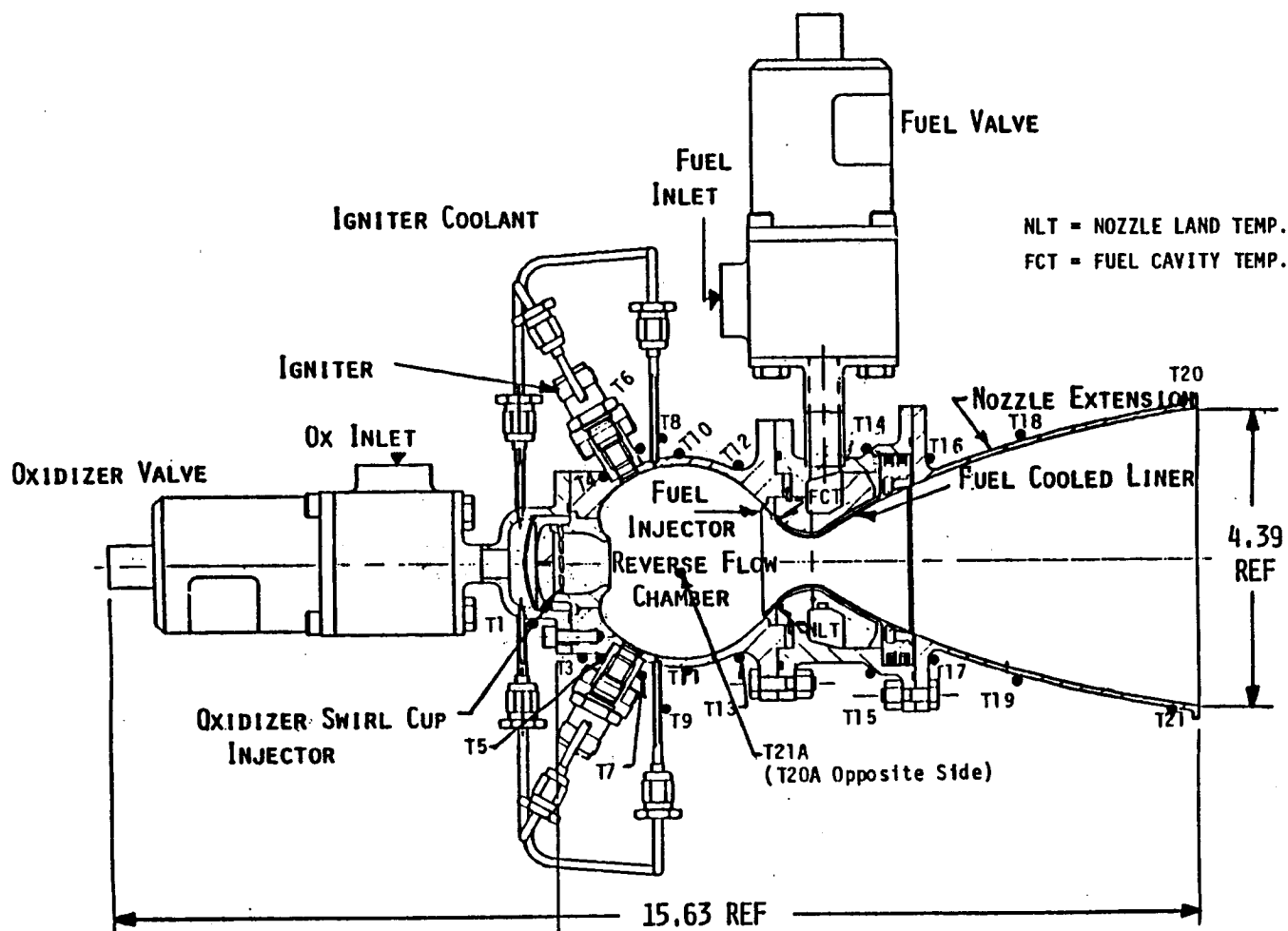


Figure A-2. Model 8911 Health Monitoring Thermocouple Locations



# BELL AEROSPACE TESTRUN

MODEL 9011 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE 01

P716 REV.01/08/86

TESTS 4322 - 4328 CELL A-2 DATE 01/08/86 - 01/08/86 TEST REF.

## TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N  
INJECTOR S/N  
E/OX VALVE S/N

T/C AT (AMB) 37830 IN2  
T/C AE (AMB) \*\*\*\*\* IN2

PSG NUM (60/60) 0.0  
USG NUM (60/60) 0.0  
FUEL NUM 0  
OXID NUM 0.0  
LBS/SEC  
LBS/SEC

## PERFORMANCE TEST DATA SUMMARY

TEST NO.	OUR DATA	***** RATION *****	WTOT	C*	*** INF ***	**ISP INF**	CF	UPO	F+P	UFI	FFI	INITIAL	IMPULSE	CUR	DPP	PA
	PNT PRESS	RDU3	TEST	CJR	TEST	COP	TEST	COR	SEC	INF	PSIA	PSIA	DEG.	FAHR	LB-SEC	PSIU
	SEC	PSIA	DEGC	LB/SEC	FI/S	LBS	LRS	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC
4328	CONV.	4.0	177.3	0.0	3.075	7.0	0.0	438.6	0.0	1.755	271.0	250.0	75.0	53.0	0.0	0.0
		4.4	107.4	0.0	3.066	0.0	0.0	436.5	0.0	1.757	270.0	250.0	75.0	52.0	0.0	0.0

ORIGINAL PAGE IS  
OF POOR QUALITY

BAROMETRIC PRESSURE	14.75 PSIA	T/C	AT 0.37830 IN2	MODEL NO	8911
TIME OF RUN	1346 HRS	T/C	AE 15.1360 IN2	TEST DATE	01/08/86
LENGTH OF RUN	5.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	OXID	NOM 0.0 LBS/SEC	1-51 NO	4322
FUEL SP. GR. 60/60	0.0	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ADJUSTICE		OSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/OX VAL S/N	

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	4.4
62. CELL AMBIENT TEMPERATURE	TAWB	DEG. FAHR	72.5	136.9	175.6	197.7	216.9	222.0
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	65.9	202.1	412.6	473.2	479.5	483.5
64. NOZZLE LAMP TEMP.	NLT	DEG. FAHR	64.5	651.8	771.5	816.7	831.9	835.4
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	60.2	69.3	69.1	68.7	68.4	68.4
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	69.1	92.7	105.8	136.3	184.7	206.3
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	67.9	78.0	104.0	147.0	213.1	242.3
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	68.0	0.0	154.0	223.0	303.6	335.1
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	69.0	121.8	175.7	238.3	312.0	341.4
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	68.0	74.7	76.1	77.3	80.3	82.0
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	67.4	70.1	71.0	72.6	75.4	77.0
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	68.5	174.5	418.4	828.3	1143.4	1257.8
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	74.2	197.3	509.3	845.0	1152.0	1262.3
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	69.0	181.0	425.5	625.1	780.4	831.9
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	69.2	164.0	404.3	611.3	777.6	833.4
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	68.0	68.4	68.4	68.8	69.8	70.3
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	67.0	67.3	67.5	68.3	70.0	70.8
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	69.3	69.8	70.0	70.3	70.7	71.0
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	69.5	69.5	69.5	69.7	70.1	70.4
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	68.0	79.0	105.2	130.0	159.7	171.5
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	66.9	78.5	103.2	125.0	151.4	162.7
83. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	66.1	97.1	141.4	191.0	239.7	256.9
84. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	66.0	83.5	116.5	154.6	195.6	211.7

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## DELL AFROSPACE TEXTIRUN

PAGE UP

- PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PT14 REV.01/08/86

WOTFL 8311

MODEL NU H911

TEST DATE 01/08/86

TEST CELL 4-2

TEST NO 4323

T/C S/N

F/DUX VAL S/M

/

BAROMETRIC PRESSURE 14.75 PSIA

TIME OF RUN 1417 HRS

LENGTH OF RUN 5.0 SEC

FUEL SP. GR. 60/60 0.0 14H

OXID SP. GR. 60/60 0.0 14H

FUEL INLET PRESSURE 13.14 PSIA

OXID TRIM ORIFICE

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	4.4
62. CELL AMBIENT TEMPERATURE	TEMP	DEG. FAHR	80.2	143.0	177.0	196.7	211.9	218.2
63. FUEL CAVITY TEMP	FCV	DEG. FAHR	178.2	341.2	449.4	503.9	524.0	529.5
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	178.4	726.8	855.6	896.3	904.3	906.1
65. SKIN TEMP. N1.1	SKNT1	DEG. FAHR	138.4	138.0	135.3	131.4	127.4	125.8
66. SKIN TEMP. N1.2	SKNT2	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. N1.3	SKNT3	DEG. FAHR	152.7	152.8	153.0	155.8	166.6	173.1
68. SKIN TEMP. N1.4	SKNT4	DEG. FAHR	152.4	166.4	188.1	235.8	301.2	325.6
69. SKIN TEMP. N1.5	SKNT5	DEG. FAHR	152.7	163.1	188.5	251.2	327.8	356.4
70. SKIN TEMP. N1.6	SKNT6	DEG. FAHR	101.1	192.7	226.5	271.8	322.6	343.0
71. SKIN TEMP. N1.7	SKNT7	DEG. FAHR	154.7	199.4	244.8	282.5	332.4	353.4
72. SKIN TEMP. N1.8	SKNT8	DEG. FAHR	136.0	138.6	137.7	137.0	136.9	137.3
73. SKIN TEMP. N1.9	SKNT9	DEG. FAHR	140.3	141.2	140.5	140.3	141.2	142.0
74. SKIN TEMP. N1.10	SKNT10	DEG. FAHR	162.3	251.5	603.2	843.0	1022.2	1085.9
75. SKIN TEMP. N1.11	SKNT11	DEG. FAHR	169.5	255.5	591.8	834.7	1026.5	1092.7
76. SKIN TEMP. N1.12	SKNT12	DEG. FAHR	173.0	286.5	510.4	711.9	970.3	921.9
77. SKIN TEMP. N1.13	SKNT13	DEG. FAHR	174.7	279.9	501.3	705.4	868.0	921.2
78. SKIN TEMP. N1.14	SKNT14	DEG. FAHR	174.8	174.6	171.1	165.1	156.2	153.6
79. SKIN TEMP. N1.15	SKNT15	DEG. FAHR	177.6	177.5	175.7	172.0	170.0	169.4
80. SKIN TEMP. N1.16	SKNT16	DEG. FAHR	174.3	174.6	174.8	175.0	175.3	175.3
81. SKIN TEMP. N1.17	SKNT17	DEG. FAHR	176.7	176.7	176.8	177.0	177.4	177.5
82. SKIN TEMP. N1.18	SKNT18	DEG. FAHR	150.6	161.3	184.7	211.4	238.0	248.4
83. SKIN TEMP. N1.19	SKNT19	DEG. FAHR	151.9	163.1	187.5	212.7	237.4	247.2
84. SKIN TEMP. N1.20	SKNT20	DEG. FAHR	137.9	166.9	217.8	265.5	309.4	325.8
85. SKIN TEMP. N1.21	SKNT21	DEG. FAHR	139.5	154.4	189.6	227.7	263.6	277.3

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# DELL AEROSPACE IEXT4UN

PAGE UP

P716 REV.01/08/86 MODEL 8311 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PARAMETER		SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	4.4
BAROMETRIC PRESSURE	14.75 PSIA	T/C	AT 0.37830 IN2	82.3	138.3	164.3	183.4	194.8	204.8
TIME OF RUN	1436 HRS	T/C	AE 15.1360 IN2	260.4	367.3	421.4	437.1	443.1	444.7
LENGTH OF RUN	5.0 SEC	FUEL	NOM 0.0 LBS/SEC	259.7	687.0	736.4	744.0	741.1	740.2
FUEL SP. GR. 60/60	0.7 W4	OXID	NOM 0.0 LBS/SEC	200.5	199.7	194.6	187.8	180.7	177.8
OXID SP. GR. 60/60	0.3 M274	FSS	NOM 0.0	0.0	0.0	0.0	0.0	0.0	0.0
FUEL TRIM ADJUSTICE		DSG	NOM 0.0	0.0	0.0	0.0	0.0	0.0	0.0
OXID TRIM ORIFICE									
EXTRA PARAMETERS									
62. CELL AMBIENT TEMPERATURE		TEMP	DEG. FAHR	227.4	227.5	227.5	229.8	237.0	241.6
63. FUEL CAVITY TEMP		FCI	DEG. FAHR	225.5	247.1	287.7	331.9	382.9	404.7
64. NOZZLE FLOW TEMP.		NLI	DEG. FAHR	226.8	249.1	291.7	341.6	398.6	421.3
65. SKIN TEMP. NO. 1		SKNT1	DEG. FAHR	199.6	235.8	260.7	300.9	347.6	369.6
66. SKIN TEMP. NO. 3		SKNT3	DEG. FAHR	228.7	243.8	271.3	312.3	359.3	382.9
67. SKIN TEMP. NO. 5		SKNT5	DEG. FAHR	190.4	192.2	188.8	186.0	184.1	183.7
68. SKIN TEMP. NO. 6		SKNT6	DEG. FAHR	190.1	199.6	196.9	195.3	194.9	195.2
69. SKIN TEMP. NO. 7		SKNT7	DEG. FAHR	240.2	334.4	556.7	746.1	902.9	955.6
70. SKIN TEMP. NO. 9		SKNT9	DEG. FAHR	246.6	343.5	564.5	751.3	906.0	957.7
71. SKIN TEMP. NO. 11		SKNT11	DEG. FAHR	252.2	345.0	543.8	691.6	794.8	827.0
72. SKIN TEMP. NO. 12		SKNT12	DEG. FAHR	252.9	338.8	534.1	682.4	786.2	820.0
73. SKIN TEMP. NO. 13		SKNT13	DEG. FAHR	248.4	247.2	238.5	225.7	211.9	206.7
74. SKIN TEMP. NO. 14		SKNT14	DEG. FAHR	253.4	253.3	248.5	240.7	232.0	228.5
75. SKIN TEMP. NO. 15		SKNT15	DEG. FAHR	243.8	244.2	244.3	244.5	244.6	244.6
76. SKIN TEMP. NO. 16		SKNT16	DEG. FAHR	247.8	249.0	247.9	248.1	248.4	248.4
77. SKIN TEMP. NO. 17		SKNT17	DEG. FAHR	213.3	222.5	240.8	260.3	279.0	286.3
78. SKIN TEMP. NO. 18		SKNT18	DEG. FAHR	215.4	227.3	249.6	272.4	296.8	303.7
79. SKIN TEMP. NO. 19		SKNT19	DEG. FAHR	196.6	227.0	268.8	307.0	338.9	349.8
80. SKIN TEMP. NO. 20		SKNT20	DEG. FAHR	198.9	217.7	251.6	286.7	320.2	331.6
81. SKIN TEMP. NO. 21		SKNT21	DEG. FAHR						

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BELL AEROSPACE TEXTRON

PAGE UP

MODEL 3911 - PRELIMINARY TEST REPORT - 02/M2 ENGINE S/N 1

0716 REV.01/08/85

BAROMETRIC PRESSURE	14.75 PSIA	T/C	AT 0.37830	IM2	MODEL NU	8911
TIME OF RUN	1450 HRS	T/C	AE 15.1360	IN2	TEST DATE	01/08/86
LENGTH OF RUN	5.0 SEC	FUEL NOM	0.0	LBS/SEC	TEST CELL	A-2
FUE SP. GR. 60/60	0.3 M44	OXID NOM	0.0	LBS/SEC	TEST NU	4325
OXID SP. GR. 60/60	0.3 M204	FSG NOM	0.0		T/C S/N	
FUEL TRIM ADJUSTICE		USC NOM	0.0		INJ S/N	
OXID TRIM ORIFICE					F/OX VAL S/N	/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	4.4
62. CELL AMBIENT TEMPERATURE	TA-MP	DEG. FAHR	80.0	128.7	169.2	133.5	212.9	219.4
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	287.3	419.0	527.7	562.1	575.9	579.2
64. NOZZLE LAMB TEMP.	NLT	DEG. FAHR	286.4	817.5	961.8	1000.6	1017.5	1024.6
65. SKIN TEMP. N1. 1	SKNT1	DEG. FAHR	230.5	229.4	223.3	214.7	205.7	202.1
66. SKIN TEMP. N1. 3	SKNT3	DEG. FAHR	259.7	259.5	259.7	262.6	272.4	278.6
67. SKIN TEMP. N1. 4	SKNT4	DEG. FAHR	256.9	263.1	275.1	300.4	338.9	359.3
68. SKIN TEMP. N1. 5	SKNT5	DEG. FAHR	258.4	263.2	280.5	321.0	378.5	407.5
69. SKIN TEMP. N1. 6	SKNT6	DEG. FAHR	253.6	280.2	327.8	393.4	472.7	504.6
70. SKIN TEMP. N1. 7	SKNT7	DEG. FAHR	259.7	294.3	337.4	394.8	468.6	500.0
71. SKIN TEMP. N1. 8	SKNT8	DEG. FAHR	214.9	214.3	210.9	207.6	205.9	205.4
72. SKIN TEMP. N1. 9	SKNT9	DEG. FAHR	224.6	222.7	219.5	217.1	216.4	216.7
73. SKIN TEMP. N1. 10	SKNT10	DEG. FAHR	270.1	344.0	538.7	764.5	995.3	1085.4
74. SKIN TEMP. N1. 11	SKNT11	DEG. FAHR	276.7	353.1	545.2	759.8	978.9	1065.0
75. SKIN TEMP. N1. 12	SKNT12	DEG. FAHR	280.0	394.4	638.6	839.7	998.3	1053.3
76. SKIN TEMP. N1. 13	SKNT13	DEG. FAHR	281.1	382.4	651.5	878.8	1058.5	1121.2
77. SKIN TEMP. N1. 14	SKNT14	DEG. FAHR	273.8	272.9	266.3	254.7	241.9	236.7
78. SKIN TEMP. N1. 15	SKNT15	DEG. FAHR	279.5	279.3	275.8	269.4	262.1	259.1
79. SKIN TEMP. N1. 16	SKNT16	DEG. FAHR	269.3	269.5	269.8	270.1	270.5	270.6
80. SKIN TEMP. N1. 17	SKNT17	DEG. FAHR	274.4	274.4	274.4	274.7	275.2	275.4
81. SKIN TEMP. N1. 18	SKNT18	DEG. FAHR	245.5	255.5	281.7	310.0	334.6	344.6
82. SKIN TEMP. N1. 19	SKNT19	DEG. FAHR	248.4	258.4	281.4	305.2	328.6	336.5
83. SKIN TEMP. N1. 20	SKNT20	DEG. FAHR	230.7	259.8	307.4	348.5	391.2	408.8
84. SKIN TEMP. N1. 21	SKNT21	DEG. FAHR	234.3	248.0	278.4	310.7	339.5	350.2

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RELL AEROSPACE TEXTRON

2716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1 PAGE 01

BAROMETRIC PRESSURE	14.75	PSIA	T/C	AT 0.37830	IN2	MODEL NU	8911
TIME OF RUN	15.04	HRS	T/C	AE 15.1360	IN2	TEST DATE	01/08/86
LENGTH OF RUN	5.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NU	4326
OXID SP. GR. 60/60	0.0	N2O4	FSG	NOM 0.0		I/C S/N	
FUEL TRIM ORIFICE			DSC	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	4.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	82.6	138.6	169.9	188.3	204.8	211.0
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	351.6	484.4	551.2	572.8	579.3	578.7
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	349.9	859.3	959.1	1005.8	1017.9	1019.7
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	293.1	291.1	282.6	271.5	259.7	255.0
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	332.0	331.7	331.8	334.4	340.0	342.9
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	327.3	338.0	370.4	413.0	459.4	479.4
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	329.5	342.5	376.7	427.9	481.7	503.9
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	319.8	330.9	348.4	386.8	436.7	461.2
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	329.6	338.2	359.3	401.4	453.6	476.1
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	267.9	267.2	261.5	256.8	253.4	252.4
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	281.3	278.8	274.4	271.1	269.1	268.8
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	342.0	465.9	704.5	919.2	1098.9	1161.2
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	344.7	472.6	712.7	932.7	1117.7	1180.9
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	346.9	474.5	694.9	867.6	992.3	1032.5
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	347.6	464.5	685.6	869.4	1004.1	1047.7
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	334.9	330.4	322.7	307.2	290.0	283.2
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	340.4	342.1	336.7	327.7	317.2	312.9
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	323.2	323.6	323.8	324.2	324.5	324.6
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	329.5	329.5	329.5	330.1	330.6	330.8
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	288.7	300.4	323.6	346.1	373.6	385.3
83. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	291.1	302.9	325.6	345.1	369.3	380.5
84. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	271.0	303.1	344.1	385.3	426.2	441.0
85. SKIN TEMP. NO. 22	SKNT22	DEG. FAHR	273.1	289.0	318.7	346.5	378.1	391.8

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PELL AEROSPACE TEXTURJN

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0716 REV.01/08/86

MODEL 8911

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PRELIMINARY TEST REPORT

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02/H2

ENGINE S/M 1

BAROMETRIC PRESSURE	14.75	PSIA	T/C	AT 0.37810	IN2	MODEL NU	8911
TIME OF RUN	1517	HRS	T/C	AE 15.1360	IN2	TEST DATE	01/08/86
LENGTH OF RUN	5.0	SEC	FUEL NOM	0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60		OXID NOM	0.0	LBS/SEC	TEST NU	4327
OXID SP. GR.	60/60		FSG NOM	0.0		T/C S/N	
EJEL TRAIL ORIFICE			OSG NUM	0.0		INJ S/N	
OXID TRIN ORIFICE						F/OX VAL S/N	

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	4.4
62. CELL AMBIENT TEMPERATURE	TAHR	DEG. FAHR	83.0	117.2	150.0	166.4	175.2	178.7
63. FUEL CAVITY TEMP	FCI	DEG. FAHR	374.8	501.0	585.0	625.4	642.2	646.9
64. NOZZLE LAND TEMP.	MLT	DEG. FAHR	373.5	896.6	1009.4	1065.5	1069.9	1071.6
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	311.6	309.8	303.4	296.6	284.9	281.0
66.			0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 2	SKNT3	DEG. FAHR	346.4	346.0	346.1	347.8	353.3	356.7
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	340.7	348.1	366.8	396.3	429.3	463.9
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	343.1	351.5	373.3	405.8	449.0	465.5
70. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	334.9	339.9	352.3	379.5	419.4	431.5
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	343.1	348.3	361.3	389.4	427.7	464.3
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	284.2	282.8	278.6	273.9	270.6	269.6
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	297.9	296.0	292.4	289.6	288.3	288.1
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	357.1	453.8	645.0	829.0	984.3	1066.3
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	364.1	461.0	652.4	837.4	1001.8	1061.5
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	368.1	471.5	662.9	824.4	949.5	989.6
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	368.6	463.6	655.6	825.7	962.5	1007.8
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	354.1	352.9	345.2	335.6	322.4	316.6
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	362.5	361.9	357.8	350.6	342.6	340.8
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	363.8	363.9	364.1	364.4	364.7	364.7
91. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	350.5	350.5	350.6	350.9	351.4	351.7
92. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	313.1	320.8	334.3	353.0	374.6	384.1
93. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	316.0	324.7	339.9	356.6	376.1	385.9
94. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	293.6	313.0	339.0	364.2	393.3	405.0
95. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	296.7	305.9	324.2	340.4	359.5	367.3

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BELL AEROSPACE TEXTRON

PAGE 10

0716 PEV.01/08/86 MODEL 3911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	4.4
62. CELL AMBIENT TEMPERATURE	TAHR	DEG.FAHR	83.3	146.9	135.0	213.8	233.7	242.1
63. FUEL CAVITY TEMP.	FCI	DEG.FAHR	398.0	471.1	507.4	514.4	515.5	522.5
64. NOZLE LAND TEMP.	NLT	DEG.FAHR	396.5	465.6	423.4	493.3	467.7	476.9
65. SKIN TEMP. NO. 1	SKNT1	DEG.FAHR	322.3	319.5	308.3	293.4	278.4	272.4
66. SKIN TEMP. NO. 2	SKNT2	DEG.FAHR	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	358.1	359.0	358.2	363.2	378.7	389.5
68. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	351.6	360.7	381.1	421.6	480.4	512.5
69. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	354.1	362.8	393.2	455.5	531.8	577.2
70. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	343.1	387.4	462.1	554.5	636.4	669.7
71. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	354.1	409.8	477.4	558.5	638.6	666.9
72. SKIN TEMP. NO. 8	SKNT8	DEG.FAHR	294.6	291.6	284.3	279.3	276.1	275.5
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	308.4	304.7	299.1	295.7	295.3	295.9
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	371.0	517.6	903.3	1266.0	1567.7	1639.1
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	392.3	512.1	857.8	1196.1	1518.8	1622.6
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	385.2	513.1	724.5	881.4	989.7	1032.0
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	385.6	511.2	742.2	926.0	1062.0	1110.2
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	371.9	370.7	355.2	335.2	316.4	307.6
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	380.6	379.3	370.9	357.3	343.1	338.7
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	359.9	360.4	360.7	360.8	360.7	360.5
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	366.7	366.8	366.9	367.3	367.4	367.4
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	320.1	333.6	357.4	385.6	410.5	420.1
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	323.2	340.3	376.0	417.3	454.6	469.6
84. SKIN TEMP. NO. 20	SKNT20	DEG.FAHR	296.9	338.9	395.7	445.9	488.7	505.3
85. SKIN TEMP. NO. 21	SKNT21	DEG.FAHR	299.4	323.1	366.3	418.9	465.7	483.9

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TESTS	4329 - 4330	CELL A-2	DATE	01/10/86 - 01/10/86	TEST REF.

~~TEST HARDWARE AND PROPELLANT NOMINALS~~

FSG NUM (60/60) U.U

F39	NUM	(60/60)	0.0
U5G	NUM	(60/60)	0.0

USG NO. 1007007 000  
EUF 1 NIM 0 LHS/SEL

JAS
HAI
V
FUEL NUM

С. НАУМЕНКО

INJECTOR S/N

F/UX VALVE S/V

## DEPENDENCE TEST DATA SUMMARY

[illegible]

# HELL AEROSPACE IEXTKUN

0716 REV. 01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1 PAGE 01

BAROMETRIC PRESSURE	14.38	PSIA	T/C	AT 0.37830	IN2	MODEL NO	8911
TIME OF RUN	1040	HRS	T/C	AE 15.1360	IN2	TEST DATE	01/10/86
LENGTH OF RUN	5.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4329
OXID SP. GR. 60/60	0.0	N204	FSG	NOM 0.0		T/C S/N	
EJECTOR ORIFICE			OSG	NUM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	4.4
62. CELL AMBIENT TEMPERATURE	IAMB	DEG. FAHR	79.8	128.2	164.5	184.0	203.8	209.8
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	74.5	253.8	375.9	438.3	473.5	483.3
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	71.9	231.9	266.0	291.6	312.4	314.0
65. SKIN TEMP. N1. 1	SKNT1	DEG. FAHR	74.6	74.7	74.7	74.5	74.2	74.2
66. SKIN TEMP. N1. 3	SKNT3	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. N1. 4	SKNT4	DEG. FAHR	74.3	74.5	74.7	77.7	86.8	92.7
68. SKIN TEMP. N1. 5	SKNT5	DEG. FAHR	74.6	83.1	94.9	119.6	162.2	184.4
69. SKIN TEMP. N1. 6	SKNT6	DEG. FAHR	73.3	102.9	137.8	186.0	209.5	238.4
70. SKIN TEMP. N1. 7	SKNT7	DEG. FAHR	74.5	82.5	95.1	121.9	167.1	190.7
71. SKIN TEMP. N1. 8	SKNT8	DEG. FAHR	73.4	78.1	79.7	81.2	83.5	84.7
72. SKIN TEMP. N1. 9	SKNT9	DEG. FAHR	72.7	79.0	80.5	82.6	86.2	89.1
73. SKIN TEMP. N1. 10	SKNT10	DEG. FAHR	74.4	156.8	407.1	707.1	999.0	1107.1
74. SKIN TEMP. N1. 11	SKNT11	DEG. FAHR	80.2	165.6	384.3	645.1	912.9	1017.2
75. SKIN TEMP. N1. 12	SKNT12	DEG. FAHR	73.7	178.3	394.6	576.1	722.3	770.1
76. SKIN TEMP. N1. 13	SKNT13	DEG. FAHR	75.2	167.2	381.7	576.0	735.9	790.2
77. SKIN TEMP. N1. 14	SKNT14	DEG. FAHR	73.7	74.1	74.1	74.6	75.4	75.9
78. SKIN TEMP. N1. 15	SKNT15	DEG. FAHR	73.0	73.0	73.5	74.4	76.1	76.9
79. SKIN TEMP. N1. 16	SKNT16	DEG. FAHR	75.1	77.3	77.5	77.5	77.9	78.2
80. SKIN TEMP. N1. 17	SKNT17	DEG. FAHR	75.3	75.3	75.3	75.9	77.2	77.9
81. SKIN TEMP. N1. 18	SKNT18	DEG. FAHR	73.6	81.8	104.7	128.3	157.2	168.8
82. SKIN TEMP. N1. 19	SKNT19	DEG. FAHR	72.2	84.3	109.6	133.0	161.3	173.0
83. SKIN TEMP. N1. 20	SKNT20	DEG. FAHR	71.4	100.8	143.2	191.4	238.1	255.9
84. SKIN TEMP. N1. 21	SKNT21	DEG. FAHR	70.7	97.2	116.2	148.6	184.6	198.4

# BELL AEROSPACE TESTIRCN

PAGE 11F

9716 REV.01/08/94 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

BAROMETRIC PRESSURE	14.38	PSIA	T/C	AT 0.37830	IN2	MODEL NO	8911
TIME OF RUN	1050	HR S	T/C	AE 15.1360	IN2	TEST DATE	01/10/86
LENGTH OF RUN	10.0	SEC	FUEL NOM	0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60	0.0	OXID NOM	0.0	LBS/SEC	TEST NO	4330
OXID SP. GR.	60/60	0.0	FSS NOM	0.0		T/C S/N	
FUEL TRIM ADJUSTICE			DSG NOM	0.0		INJ S/N	
OXID TRIM ORIFICE			F/OX VAL	S/N			

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	9.4
62. CELL AMBIENT TEMPERATURE	IAWB	DEG. FAHR	81.5	134.5	169.6	193.1	210.8	225.3	266.7
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	214.2	372.1	485.8	529.0	554.4	569.1	603.6
64. NOZZLE LAMB TEMP.	NLT	DEG. FAHR	212.5	792.9	923.8	983.7	990.3	998.1	1018.0
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	198.5	197.4	192.6	186.1	179.3	172.5	146.1
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	233.4	233.1	233.0	234.9	241.3	253.0	348.4
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	229.5	215.7	250.5	276.4	310.9	347.0	551.9
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	231.5	236.6	252.2	283.1	324.3	367.9	582.1
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	226.6	231.9	243.8	271.7	313.5	360.6	608.9
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	230.7	234.2	243.5	267.7	306.6	351.5	601.9
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	179.0	178.8	174.8	171.4	169.7	170.9	179.6
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	195.8	199.5	200.6	201.9	204.5	208.5	261.7
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	231.9	337.8	561.2	770.2	951.1	1105.7	1530.2
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	242.2	335.5	569.0	784.5	971.2	1131.3	1583.9
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	227.7	319.7	559.1	738.5	876.0	977.4	1210.7
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	230.2	329.4	547.6	738.2	887.3	996.2	1258.7
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	190.4	189.9	185.7	178.9	172.0	167.8	142.2
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	196.5	196.4	194.1	190.0	185.8	181.9	170.4
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	170.7	172.9	173.3	173.7	174.2	174.9	179.3
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	178.3	178.4	178.7	179.6	181.3	183.3	194.6
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	169.9	175.2	197.1	223.8	250.9	277.8	381.5
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	168.1	178.9	206.6	235.3	263.7	291.2	403.4
84. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	170.7	196.6	241.4	284.6	324.4	357.5	504.8
85. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	167.5	180.2	210.7	243.7	275.9	306.4	428.6

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TESTS 4331 - 4332 CELL A-2 DATE 01/10/86 - 01/10/86 TEST REF.

## TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N  
INJECTOR S/N  
ENTRY VALVE S/NT/C AT(AMB) .37830 IN2  
T/C AE(AMB) \*\*\*\*\* IN2FSG NUM (60/60) 0.0  
USG NUM (60/60) 0.0  
FUEL NUM 0  
OXID NUM 0LBS/SEC  
LBS/SEC

## PERFORMANCE TEST DATA SUMMARY

## MEASURED

TEST NO.	DUR	DATA	*****	WTOT	C*	***F	INF***	**ISP	INF**	CF	OFF	F+P	UFT	F+T	TOTAL	DPO	DPT	PA	
SEC	SEC	SEC	PSIA	PERC	TEST	COR	LB/SEC	FT/S	LBS	SEC	SEC	PSIA	DEG.	F4HR	LB-SEC	PSID	PSID	PSIA	
331	30.0	1.0	70.3	0.0	2.882	0.0	109955	7788.	47.28	0.0	430.0	0.0	1.778	173.	217.	74.	0.0	0.0	0.090
	2.0	70.6	0.0	2.977	0.0	110079	7816.	47.60	0.0	432.4	0.0	1.781	173.	217.	72.	0.0	0.0	0.086	
	3.0	70.9	0.0	2.968	0.0	110231	7834.	47.93	0.0	434.8	0.0	1.787	173.	218.	69.	0.0	0.0	0.090	
	4.0	71.1	0.0	2.858	0.0	110332	7848.	48.26	0.0	437.4	0.0	1.795	173.	218.	64.	0.0	0.0	0.092	
	5.0	71.3	0.0	2.849	0.0	110421	7864.	48.73	0.0	441.3	0.0	1.807	173.	218.	61.	0.0	0.0	0.093	
	10.0	71.9	0.0	2.814	0.0	110776	7906.	51.11	0.0	452.3	0.0	1.842	173.	218.	61.	0.0	0.0	0.095	
	15.0	72.2	0.0	2.974	0.0	110907	7926.	50.21	0.0	452.7	0.0	1.839	173.	218.	61.	0.0	0.0	0.096	
	20.0	72.3	0.0	2.900	0.0	111037	7934.	49.94	0.0	449.8	0.0	1.825	173.	218.	70.	0.0	0.0	0.096	
	25.0	72.4	0.0	2.798	0.0	111149	7939.	49.56	0.0	445.9	0.0	1.808	173.	217.	69.	0.0	0.0	0.096	
	29.4	72.5	0.0	2.798	0.0	111234	7942.	49.10	0.0	441.4	0.0	1.790	173.	217.	66.	0.0	0.0	0.096	
332	11.9	1.0	73.6	0.0	3.506	0.0	115450	7765.	50.20	0.0	434.8	0.0	1.803	190.	195.	74.	0.0	0.0	0.080
	2.0	73.5	0.0	3.506	0.0	115854	7723.	50.54	0.0	437.1	0.0	1.823	189.	195.	72.	0.0	0.0	0.079	
	3.0	73.6	0.0	3.501	0.0	115973	7727.	51.37	0.0	440.3	0.0	1.835	189.	195.	72.	0.0	0.0	0.083	
	4.0	73.7	0.0	3.496	0.0	116049	7735.	51.35	0.0	442.5	0.0	1.842	189.	195.	72.	0.0	0.0	0.085	
	5.0	73.8	0.0	3.492	0.0	116132	7739.	51.52	0.0	443.7	0.0	1.846	189.	195.	72.	0.0	0.0	0.087	
	10.0	74.2	0.0	3.482	0.0	116344	7766.	51.26	0.0	440.6	0.0	1.827	189.	195.	71.	0.0	0.0	0.080	
	11.3	74.2	0.0	3.485	0.0	116512	7751.	51.00	0.0	437.7	0.0	1.816	189.	195.	70.	0.0	0.0	0.090	

RELL AEROSPACE TEXTRON

PAGE 0F

MODEL 9911 - PRELIMINARY TEST REPORT - 02/M2 ENGINE S/N 1

0716 REV.01/08/86

BAROMETRIC PRESSURE		14.38	PSIA	T/C		AT 0.37830	IN2	MODEL NO		R911				
TIME OF RUN		14.07	URS	T/C		AE 15.1360	IN2	TEST DATE		01/10/86				
LENGTH OF RUN		30.0	SEC	FUEL		NOM 0.0	1.85/SEC	TEST CELL		A-2				
FUEL SP. GR.		60/60	MMH	OXID		NOM 0.0	1.85/SEC	TEST NO		4331				
OXID SP. GR.		60/60	N274	FSG		NOM 0.0		T/C		S/N				
FUEL TRIM DEVICE		0.0		DSG		NOM 0.0		INJ		S/N				
OXID TRIM DEVICE								F/OX VAL		S/N				
										/				
EXTRA PARAMETERS														
PARAMETER				UNITS		STATIC		1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE		IAMB		DEG. FAHR		79.5		130.3	164.4	181.6	195.3	205.4	236.3	250.2
63. FUEL CAVITY TEMP		FCV		DEG. FAHR		80.9		227.8	326.1	365.7	387.0	397.9	415.2	414.8
64. NOZZLE LAND TEMP.		NLT		DEG. FAHR		80.7		497.2	537.2	633.0	697.9	680.9	726.9	714.0
65. SKIN TEMP. NO. 1		SKNT1		DEG. FAHR		81.3		81.4	81.2	80.8	80.3	79.8	78.1	77.2
66. SKIN TEMP. NO. 3		SKNT3		DEG. FAHR		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 4		SKNT4		DEG. FAHR		80.1		80.4	80.4	82.1	87.7	98.1	205.6	352.1
68. SKIN TEMP. NO. 5		SKNT5		DEG. FAHR		79.6		95.1	119.6	150.5	190.8	234.5	462.4	604.4
69. SKIN TEMP. NO. 6		SKNT6		DEG. FAHR		79.0		89.3	111.3	139.8	181.8	228.7	451.3	620.1
70. SKIN TEMP. NO. 7		SKNT7		DEG. FAHR		78.5		87.9	104.7	127.7	165.1	213.3	463.0	640.7
71. SKIN TEMP. NO. 8		SKNT8		DEG. FAHR		79.4		86.8	102.1	123.7	158.4	204.1	453.8	642.5
72. SKIN TEMP. NO. 9		SKNT9		DEG. FAHR		76.7		91.3	82.0	83.6	85.4	87.3	107.8	139.9
73. SKIN TEMP. NO. 10		SKNT10		DEG. FAHR		75.7		79.1	80.0	81.5	84.1	87.8	136.6	241.4
74. SKIN TEMP. NO. 11		SKNT11		DEG. FAHR		80.2		160.3	361.5	540.3	595.6	824.3	1196.9	1329.7
75. SKIN TEMP. NO. 12		SKNT12		DEG. FAHR		85.9		166.9	373.4	551.2	718.3	851.1	1241.4	1382.7
76. SKIN TEMP. NO. 13		SKNT13		DEG. FAHR		80.0		163.3	356.5	508.3	620.8	706.9	896.4	938.4
77. SKIN TEMP. NO. 14		SKNT14		DEG. FAHR		81.5		153.7	339.7	492.2	604.9	702.4	908.0	955.9
78. SKIN TEMP. NO. 15		SKNT15		DEG. FAHR		79.8		80.0	79.8	79.8	79.8	80.4	82.0	81.4
79. SKIN TEMP. NO. 16		SKNT16		DEG. FAHR		79.2		79.7	79.5	79.8	80.8	82.0	89.7	94.1
80. SKIN TEMP. NO. 17		SKNT17		DEG. FAHR		80.6		83.0	82.9	82.6	83.2	83.6	87.3	93.1
81. SKIN TEMP. NO. 18		SKNT18		DEG. FAHR		91.1		81.2	81.1	81.4	82.0	83.1	92.1	103.2
82. SKIN TEMP. NO. 19		SKNT19		DEG. FAHR		76.0		82.4	99.5	117.9	136.9	158.2	254.8	333.0
83. SKIN TEMP. NO. 20		SKNT20		DEG. FAHR		74.9		86.4	110.6	133.5	160.9	188.4	312.4	414.7
84. SKIN TEMP. NO. 21		SKNT21		DEG. FAHR		72.4		96.9	133.9	176.1	215.7	251.5	389.9	498.8
85. SKIN TEMP. NO. 22		SKNT22		DEG. FAHR		71.9		88.3	118.3	153.9	191.7	228.3	380.8	511.2

ORIGINAL PAGE IS  
OF POOR QUALITY

5714 REV. 01/08/86

BAROMETRIC PRESSURE 14.38 PSIA  
 TIME OF RUN 14.77 HRS  
 LENGTH OF RUN 30.0 SEC  
 FUEL SP. GR. 60/60 0.0 MMH  
 OXID SP. GR. 60/60 0.0 N2O4  
 FUEL TRIM ORIFICE  
 OXID TRIM ORIFICE  
 T/C AT 0.37830 INZ  
 T/C AE 15.1360 INZ  
 FUEL NOM 0.0 LBS/SEC  
 OXID NOM 0.0 LBS/SEC  
 FSG NOM 0.0  
 DSG NOM 0.0  
 MODEL NO 8911  
 TEST DATE 01/10/86  
 TEST CELL A-2  
 TEST NO 4331  
 T/C S/N  
 INJ S/N  
 F/LUX VAL S/N /

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	25.0	29.4
62. CELL AMBIENT TEMPERATURE	IAMB	DEG. FAHR	79.5	263.0	270.2	270.4
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	80.9	411.7	410.2	410.4
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	80.7	689.0	650.2	680.5
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	81.3	77.3	77.9	79.3
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	80.1	495.9	615.8	705.0
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	79.6	724.7	805.6	864.1
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	79.0	744.8	835.2	896.7
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	78.5	750.6	817.9	864.2
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	79.4	762.0	838.5	886.3
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	76.7	182.7	219.6	244.7
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	75.7	349.6	448.3	514.8
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	80.2	1373.9	1388.3	1394.7
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	85.9	1436.9	1462.7	1473.5
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	80.0	945.6	945.9	946.7
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	81.5	973.9	975.2	976.2
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	79.8	79.7	78.3	77.1
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	79.2	95.9	96.7	97.2
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	80.6	99.2	104.6	105.0
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	81.1	113.6	118.7	125.6
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	76.0	398.5	454.4	497.4
83. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	74.9	501.6	571.9	631.8
84. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	72.4	584.2	664.6	722.3
85. SKIN TEMP. NO. 22	SKNT22	DEG. FAHR	71.9	624.3	720.5	789.6

BELL AEROSPACE TEXTRON

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P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PARAMETER		UNITS		STATIC		1.0		2.0		3.0		4.0		5.0		10.0		11.3	
SYMBOL		T/C		AT 0.37830 IN2		T/C		AE 15.1360 IN2		FUEL NOM 0.0		LBS/SEC		OXID NOM 0.0		LBS/SEC		F/GX VAL S/N	
EXTRA PARAMETERS		FUEL NOM 0.0		LBS/SEC		OXID NOM 0.0		LBS/SEC		F/GX VAL S/N		FUEL NOM 0.0		LBS/SEC		OXID NOM 0.0		F/GX VAL S/N	
BAROMETRIC PRESSURE		14.38 PSIA		14.41 HRS		11.9 SEC		0.0 MMH		0.0 N204		0.0		0.0		0.0		0.0	
TIME OF RUN		14.41 HRS		11.9 SEC		0.0 MMH		0.0 N204		0.0		0.0		0.0		0.0		0.0	
LENGTH OF RUN		11.9 SEC		0.0 MMH		0.0 N204		0.0		0.0		0.0		0.0		0.0		0.0	
FUEL SP. GR. 60/60		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
OXID SP. GR. 60/60		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
EUEL TRIM ORIFICE		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
OXID TRIM ORIFICE		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0		0.0	
PARAMETER		T/C		AT 0.37830 IN2		T/C		AE 15.1360 IN2		FUEL NOM 0.0		LBS/SEC		OXID NOM 0.0		LBS/SEC		F/GX VAL S/N	
62. CELL AMBIENT TEMPERATURE		TAN9		DEG. FAHR		84.5		135.6		170.4		190.8		208.0		222.5		255.3	
63. FUEL CAVITY TEMP		FCT		DEG. FAHR		285.2		383.8		452.9		483.9		493.5		496.5		524.1	
64. NOZZLE LAND TEMP.		NLT		DEG. FAHR		283.5		763.0		844.6		886.4		903.4		913.0		917.4	
65. SKIN TEMP. N1. 1		SKNT1		DEG. FAHR		280.3		278.3		270.8		261.1		250.7		240.3		193.9	
66. SKIN TEMP. N1. 3		SKNT3		DEG. FAHR		322.8		322.6		322.6		326.2		336.0		347.3		470.4	
67. SKIN TEMP. N1. 4		SKNT4		DEG. FAHR		316.0		318.8		334.5		378.1		432.2		481.8		688.6	
68. SKIN TEMP. N1. 5		SKNT5		DEG. FAHR		319.3		323.0		342.9		392.5		447.1		496.4		708.8	
69. SKIN TEMP. N1. 6		SKNT6		DEG. FAHR		310.9		332.5		351.3		388.1		436.2		486.3		723.1	
70. SKIN TEMP. N1. 7		SKNT7		DEG. FAHR		316.2		319.1		332.0		366.9		419.7		471.8		721.0	
71. SKIN TEMP. N1. 8		SKNT8		DEG. FAHR		240.7		238.9		233.5		229.1		226.0		223.9		234.0	
72. SKIN TEMP. N1. 9		SKNT9		DEG. FAHR		265.0		273.9		276.4		279.0		283.0		288.9		357.4	
73. SKIN TEMP. N1. 10		SKNT10		DEG. FAHR		313.1		498.8		809.8		955.7		1075.9		1178.8		1492.9	
74. SKIN TEMP. N1. 11		SKNT11		DEG. FAHR		321.8		484.5		789.4		960.5		1097.3		1209.5		1549.4	
75. SKIN TEMP. N1. 12		SKNT12		DEG. FAHR		299.3		399.7		581.0		734.4		848.6		933.1		1118.7	
76. SKIN TEMP. N1. 13		SKNT13		DEG. FAHR		299.5		392.7		574.7		734.3		856.3		947.5		1146.9	
77. SKIN TEMP. N1. 14		SKNT14		DEG. FAHR		265.9		264.7		256.3		243.8		230.1		216.7		166.5	
78. SKIN TEMP. N1. 15		SKNT15		DEG. FAHR		273.9		273.6		269.7		260.8		251.8		242.8		205.9	
79. SKIN TEMP. N1. 16		SKNT16		DEG. FAHR		258.1		260.7		261.0		261.4		261.8		262.0		262.8	
80. SKIN TEMP. N1. 17		SKNT17		DEG. FAHR		272.8		273.1		273.0		273.2		273.3		273.7		276.1	
81. SKIN TEMP. N1. 18		SKNT18		DEG. FAHR		324.0		330.3		342.1		359.3		380.0		402.4		492.8	
82. SKIN TEMP. N1. 19		SKNT19		DEG. FAHR		327.3		338.2		357.6		382.2		408.7		431.8		540.4	
83. SKIN TEMP. N1. 20		SKNT20		DEG. FAHR		337.7		360.2		399.0		434.0		466.1		496.5		632.5	
84. SKIN TEMP. N1. 21		SKNT21		DEG. FAHR		342.0		354.9		388.9		424.9		458.1		490.0		631.5	

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BAROMETRIC PRESSURE		14.63	PSIA	T/C		AT 0.37830	IN2	MODEL NO		H911			
TIME OF RUN		1435	HR S	T/C		AF 15.1360	JN2	TEST DATE		01/23/85			
LENGTH OF RUN		5.0	SEC	FUEL		NOM 0.0	LBS/SEC	TEST CELL		A-2			
FUEL SP. GR. 60/60		0.0	MM4	OXID		NOM 0.0	LBS/SEC	TEST NU		4333			
OXIN SP. GR. 60/60		0.0	N204	FS3		NOM 0.0		T/C S/N					
FUEL TRIP OFFICE				DS3		NOM 0.0		INJ S/N					
OXID TRIM ORIFICE								T/DUX VAL S/N		/			
EXTRA PARAMETERS													
PARAMETER													
SYMBOL		UNITS		STATIC		1.0		2.0		3.0	4.0	4.5	
62. CELL AMBIENT TEMPERATURE		TAWR		DEG. FAHR		86.7		133.6		175.5	198.1	214.5	220.5
63. FUEL CAVITY TEMP		FCT		DEG. FAHR		76.4		288.1		408.6	458.1	479.8	484.1
64. NOZZLE LAND TEMP.		NLT		DEG. FAHR		75.4		631.6		757.9	817.8	835.2	838.8
65. SKIN TEMP. N1. 1		SKNT1		DEG. FAHR		76.5		76.7		76.6	76.4	76.3	76.2
66. SKIN TEMP. N1. 3		SKNT3		DEG. FAHR		0.0		0.0		0.0	0.0	0.0	0.0
67. SKIN TEMP. N1. 4		SKNT4		DEG. FAHR		76.1		76.3		76.4	78.3	84.7	88.7
68. SKIN TEMP. N1. 5		SKNT5		DEG. FAHR		76.4		99.7		133.2	177.2	230.0	251.7
69. SKIN TEMP. N1. 6		SKNT6		DEG. FAHR		75.9		99.1		135.5	197.1	247.0	271.3
70. SKIN TEMP. N1. 7		SKNT7		DEG. FAHR		75.2		95.4		123.0	160.5	207.5	229.2
71. SKIN TEMP. N1. 8		SKNT8		DEG. FAHR		75.6		102.3		128.7	173.5	233.8	253.2
72. SKIN TEMP. N1. 9		SKNT9		DEG. FAHR		76.1		78.7		79.7	81.1	83.2	84.1
73. SKIN TEMP. N1. 10		SKNT10		DEG. FAHR		74.9		77.2		78.3	79.7	81.0	81.9
74. SKIN TEMP. N1. 11		SKNT11		DEG. FAHR		75.9		151.0		387.8	593.6	775.1	840.5
75. SKIN TEMP. N1. 12		SKNT12		DEG. FAHR		81.5		171.3		403.6	617.6	805.8	873.3
76. SKIN TEMP. N1. 13		SKNT13		DEG. FAHR		75.9		171.9		401.4	585.1	727.0	772.2
77. SKIN TEMP. N1. 14		SKNT14		DEG. FAHR		76.4		159.7		397.9	581.6	734.5	784.1
78. SKIN TEMP. N1. 15		SKNT15		DEG. FAHR		75.2		75.4		75.3	75.3	75.4	75.6
79. SKIN TEMP. N1. 16		SKNT16		DEG. FAHR		76.5		77.4		77.5	77.9	79.1	79.7
80. SKIN TEMP. N1. 17		SKNT17		DEG. FAHR		76.7		77.3		77.5	77.6	78.3	78.8
81. SKIN TEMP. N1. 18		SKNT18		DEG. FAHR		77.1		77.5		77.5	78.1	79.6	80.4
82. SKIN TEMP. N1. 19		SKNT19		DEG. FAHR		75.5		82.0		107.4	139.3	177.6	192.6
83. SKIN TEMP. N1. 20		SKNT20		DEG. FAHR		74.3		87.6		116.8	146.7	180.1	193.0
84. SKIN TEMP. N1. 21		SKNT21		DEG. FAHR		74.4		100.4		146.7	200.3	252.4	272.2
85. SKIN TEMP. N1. 22		SKNT22		DEG. FAHR		73.8		93.2		179.2	173.0	217.5	235.0

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PARAMETER		EXTRA PARAMETERS		F/U VAL S/N		1		2		3		4		5		6		7		8		9		10		11		12	
SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0	27.0
1. BAROMETRIC PRESSURE	14.63 PSIA	I/C AT 0.37830 IN2																											
2. TIME OF RUN	1447 HRS	T/C AE 15.1360 IN2																											
3. LENGTH OF RUN	12.2 SEC	FUEL NOM 0.0	LBS/SEC																										
4. FUEL SP. GR.	60/60	OXID NOM 0.0	LBS/SEC																										
5. OXID SP. GR.	60/60	FSG NOM 0.0																											
6. FUEL T214 221EICE	0.0	OSG NOM 0.0																											
7. OXID TRIM ORIFICE																													
8. CELL AMBIENT TEMPERATURE		IAMB	DEG. FAHR	86.5	140.6	178.1	201.5	217.5	230.5	281.5	289.3																		
9. FUEL CAVITY TEMP		FCT	DEG. FAHR	200.5	348.5	451.2	490.3	510.5	520.3	538.4	541.1																		
10. NOZZLE LAND TEMP.		NLT	DEG. FAHR	198.2	724.4	833.5	898.1	926.3	928.0	955.9	960.9																		
11. SKIN TEMP. N1. 1		SKNT1	DEG. FAHR	176.7	175.8	171.6	166.7	158.6	153.0	128.8	123.1																		
12. SKIN TEMP. N1. 2		SKNT2	DEG. FAHR	210.0	209.8	209.7	211.7	219.5	231.0	351.1	406.2																		
13. SKIN TEMP. N1. 3		SKNT3	DEG. FAHR	205.4	221.8	256.3	296.1	343.5	394.9	638.2	707.1																		
14. SKIN TEMP. N1. 4		SKNT4	DEG. FAHR	208.1	225.6	263.7	312.9	365.3	425.1	689.1	761.1																		
15. SKIN TEMP. N1. 5		SKNT5	DEG. FAHR	202.5	213.4	236.8	275.6	324.8	379.1	659.8	734.1																		
16. SKIN TEMP. N1. 6		SKNT6	DEG. FAHR	205.6	220.6	247.2	288.4	338.9	399.4	886.9	1036.9																		
17. SKIN TEMP. N1. 7		SKNT7	DEG. FAHR	161.9	164.6	162.0	159.8	158.2	158.0	175.3	187.8																		
18. SKIN TEMP. N1. 8		SKNT8	DEG. FAHR	173.7	175.1	172.9	170.8	169.6	169.9	198.6	217.7																		
19. SKIN TEMP. N1. 9		SKNT9	DEG. FAHR	210.9	306.0	518.5	715.5	885.6	1027.3	1458.2	1533.5																		
20. SKIN TEMP. N1. 10		SKNT10	DEG. FAHR	219.0	318.0	538.3	747.3	930.0	1084.8	1566.1	1648.6																		
21. SKIN TEMP. N1. 11		SKNT11	DEG. FAHR	208.9	312.0	521.6	691.7	816.8	912.0	1132.9	1160.9																		
22. SKIN TEMP. N1. 12		SKNT12	DEG. FAHR	209.8	303.0	513.4	698.3	840.3	948.7	1210.5	1251.3																		
23. SKIN TEMP. N1. 13		SKNT13	DEG. FAHR	180.6	180.1	176.0	170.6	162.6	154.6	129.6	123.5																		
24. SKIN TEMP. N1. 14		SKNT14	DEG. FAHR	188.4	188.8	185.3	181.9	177.2	172.9	157.7	154.7																		
25. SKIN TEMP. N1. 15		SKNT15	DEG. FAHR	170.7	169.4	169.1	169.5	170.2	171.0	177.3	179.4																		
26. SKIN TEMP. N1. 16		SKNT16	DEG. FAHR	172.6	173.0	173.2	174.2	175.6	177.6	190.2	194.2																		
27. SKIN TEMP. N1. 17		SKNT17	DEG. FAHR	172.3	179.6	206.3	240.7	274.2	305.0	433.7	469.7																		
28. SKIN TEMP. N1. 18		SKNT18	DEG. FAHR	171.8	186.6	218.2	249.6	280.1	309.4	446.5	481.6																		
29. SKIN TEMP. N1. 19		SKNT19	DEG. FAHR	176.1	205.9	256.6	306.0	349.4	394.2	573.1	625.9																		
30. SKIN TEMP. N1. 20		SKNT20	DEG. FAHR	176.1	205.9	256.6	306.0	349.4	394.2	573.1	625.9																		
31. SKIN TEMP. N1. 21		SKNT21	DEG. FAHR	176.1	197.7	239.4	281.9	321.6	356.3	530.7	575.7																		

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PARAMETER		UNITS		STATIC		1.0		2.0		3.0		5.0		11.1	
SYMBOL		TAMR		DEG. FAHR		FUEL		FUEL		FUEL		FUEL		FUEL	
62. CELL AMBIENT TEMPERATURE		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
63. FUEL CAVITY TEMP.		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
64. NOZLE LAND TEMP.		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
65. SKIN TEMP. NO. 1		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
66. SKIN TEMP. NO. 2		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
67. SKIN TEMP. NO. 3		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
68. SKIN TEMP. NO. 4		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
69. SKIN TEMP. NO. 5		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
70. SKIN TEMP. NO. 6		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
71. SKIN TEMP. NO. 7		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
72. SKIN TEMP. NO. 8		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
73. SKIN TEMP. NO. 9		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
74. SKIN TEMP. NO. 10		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
75. SKIN TEMP. NO. 11		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
76. SKIN TEMP. NO. 12		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
77. SKIN TEMP. NO. 13		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
78. SKIN TEMP. NO. 14		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
79. SKIN TEMP. NO. 15		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
80. SKIN TEMP. NO. 16		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
81. SKIN TEMP. NO. 17		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
82. SKIN TEMP. NO. 18		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
83. SKIN TEMP. NO. 19		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
84. SKIN TEMP. NO. 20		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	
85. SKIN TEMP. NO. 21		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL		FUEL	

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BAROMETRIC PRESSURE	14.63	PSIA	T/C	AT 0.37830	IN2	MUDEL NU	8911
TIME OF RUN	1520	HRS	T/C	AE 15.1360	IN2	TEST DATE	01/23/85
LENGTH OF RUN	9.8	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NU	4336
OXID SP. GR. 60/60	0.0	N204	FSG	NOM 0.0		I/C S/N	
FUEL TRIM ADJUST			OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/
EXTRA PARAMETERS							
PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	90.8	143.3	182.8	213.4	235.0
63. FUEL CAVITY TEMP	FCV	DEG. FAHR	412.9	490.6	545.2	551.5	548.2
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	410.6	864.5	945.9	981.0	988.7
65. SKIN TEMP. N1.1	SKNT1	DEG. FAHR	345.6	342.7	333.4	318.6	302.1
66. SKIN TEMP. N1.2	SKNT2	DEG. FAHR	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. N1.3	SKNT3	DEG. FAHR	414.4	414.2	414.0	415.7	423.8
68. SKIN TEMP. N1.4	SKNT4	DEG. FAHR	402.3	418.7	457.6	504.6	554.8
69. SKIN TEMP. N1.5	SKNT5	DEG. FAHR	409.3	428.5	472.5	528.5	585.9
70. SKIN TEMP. N1.6	SKNT6	DEG. FAHR	396.1	408.9	436.5	481.4	536.7
71. SKIN TEMP. N1.7	SKNT7	DEG. FAHR	404.4	419.7	450.3	497.9	552.5
72. SKIN TEMP. N1.8	SKNT8	DEG. FAHR	311.9	308.3	300.5	293.8	284.3
73. SKIN TEMP. N1.9	SKNT9	DEG. FAHR	337.7	335.0	330.6	327.0	322.7
74. SKIN TEMP. N1.10	SKNT10	DEG. FAHR	415.4	533.1	772.3	976.8	1141.0
75. SKIN TEMP. N1.11	SKNT11	DEG. FAHR	426.6	546.2	791.2	1006.0	1180.6
76. SKIN TEMP. N1.12	SKNT12	DEG. FAHR	418.1	537.8	754.3	909.3	1010.1
77. SKIN TEMP. N1.13	SKNT13	DEG. FAHR	404.0	503.8	707.2	865.5	977.3
78. SKIN TEMP. N1.14	SKNT14	DEG. FAHR	378.5	380.2	362.8	342.0	323.1
79. SKIN TEMP. N1.15	SKNT15	DEG. FAHR	395.7	395.1	383.4	369.1	353.9
80. SKIN TEMP. N1.16	SKNT16	DEG. FAHR	357.1	357.5	357.7	358.2	358.5
81. SKIN TEMP. N1.17	SKNT17	DEG. FAHR	367.0	367.4	367.9	368.7	369.2
82. SKIN TEMP. N1.18	SKNT18	DEG. FAHR	349.9	357.8	385.5	418.9	452.4
83. SKIN TEMP. N1.19	SKNT19	DEG. FAHR	353.5	372.3	413.6	450.4	486.5
84. SKIN TEMP. N1.20	SKNT20	DEG. FAHR	342.3	378.3	437.9	496.6	548.1
85. SKIN TEMP. N1.21	SKNT21	DEG. FAHR	344.3	372.8	427.2	479.9	531.2

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BELL AEROSPACE TEXTRON

P716 REV.01/08/86

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE UF

TESTS 4337 - 4338 CELL A-2 DATE 02/10/86 - 02/10/86 TEST REF. 911-E-001

TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N  
INJECTOR S/N  
F/OX VALVE S/N

T/C AT(AMB) .37830 IN2  
T/C AE(AMB) \*\*\*\*\* IN2

FSG NUM (60/60) 0.0  
DSG NUM (60/60) 0.0  
FUEL NUM 0.0  
OXID NUM 0.0

LBS/SEC  
LBS/SEC

PERFORMANCE TEST DATA SUMMARY

MEASURED

TEST NO.	DUR	DATA	*****	***RATIO***	WTOT	C*	***F	INF***	**ISP	INF**	CF	OFF	FFP	OF1	FFT	TOTAL	DPD	DPF	PA	
SEC	SEC	PSIA	PERC	TEST	COR	LB/SEC	FT/S	LB/SEC	FT/S	LB/SEC	FT/S	PSIA	SEC	PSIA	DEG.	FAHR	LB-SEC	PSID	PSID	PSIA

4337

13.0	1.0	73.4	0.0	4.043	0.0	.119515	7483.	51.41	0.0	430.1	0.0	1.851	194.	184.	72.	75.	0.0	0.0	0.0	0.079
2.0	73.8	0.0	4.033	0.0	.119622	7513.	51.79	0.0	433.0	0.0	1.856	194.	184.	73.	74.	0.0	0.0	0.0	0.077	
3.0	74.0	0.0	4.029	0.0	.119683	7535.	51.93	0.0	433.9	0.0	1.854	194.	185.	73.	73.	0.0	0.0	0.0	0.081	
4.0	74.2	0.0	4.019	0.0	.119737	7550.	51.97	0.0	434.1	0.0	1.851	194.	185.	73.	70.	0.0	0.0	0.0	0.083	
5.0	74.4	0.0	4.005	0.0	.119815	7564.	51.99	0.0	434.0	0.0	1.847	194.	185.	73.	65.	0.0	0.0	0.0	0.085	
10.0	75.2	0.0	3.955	0.0	.120131	7620.	52.49	0.0	437.0	0.0	1.846	194.	185.	72.	53.	0.0	0.0	0.0	0.090	
12.4	75.3	0.0	3.942	0.0	.120264	7627.	52.55	0.0	436.9	0.0	1.845	194.	185.	72.	50.	0.0	0.0	0.0	0.090	

4338

30.0	1.0	74.0	0.0	3.025	0.0	.115021	7835.	51.30	0.0	446.0	0.0	1.833	175.	219.	73.	66.	0.0	0.0	0.0	0.081
2.0	74.3	0.0	3.014	0.0	.115350	7844.	51.85	0.0	449.5	0.0	1.845	175.	219.	73.	64.	0.0	0.0	0.0	0.081	
3.0	74.5	0.0	3.006	0.0	.115479	7858.	52.16	0.0	451.7	0.0	1.851	175.	220.	72.	62.	0.0	0.0	0.0	0.084	
4.0	74.7	0.0	2.999	0.0	.115603	7871.	52.37	0.0	453.0	0.0	1.853	175.	220.	72.	59.	0.0	0.0	0.0	0.088	
5.0	74.9	0.0	2.992	0.0	.115709	7883.	52.52	0.0	453.9	0.0	1.854	175.	220.	72.	56.	0.0	0.0	0.0	0.090	
10.0	75.4	0.0	2.967	0.0	.116104	7909.	53.00	0.0	456.5	0.0	1.858	175.	220.	70.	47.	0.0	0.0	0.0	0.093	
15.0	75.7	0.0	2.962	0.0	.116498	7916.	53.21	0.0	456.8	0.0	1.858	175.	220.	69.	42.	0.0	0.0	0.0	0.094	
20.0	75.9	0.0	2.952	0.0	.116762	7923.	53.15	0.0	455.2	0.0	1.850	175.	220.	66.	38.	0.0	0.0	0.0	0.095	
29.4	76.3	0.0	2.947	0.0	.117154	7932.	52.52	0.0	448.3	0.0	1.820	175.	220.	62.	34.	0.0	0.0	0.0	0.096	

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## BELL AEROSPACE TEXTRON

PAGE 0F

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/09/86

BAROMETRIC PRESSURE 14.49 PSIA		T/C	AT 0.37830	IN2	MUDEL NO 8911					
TIME OF RUN 1053 HRS		T/C	AE 15.1360	IN2	TEST DATE 02/10/86					
LENGTH OF RUN 13.0 SEC		FUEL NOM 0.0	LBS/SEC	TEST CELL A-2						
FUEL SP. GR. 60/60 0.3 MMH		OXID NOM 0.0	LBS/SEC	TEST NO 4337						
OXID SP. GR. 60/60 0.3 N204		FSG NOM 0.0		T/C S/N						
FUEL TRIM BRIDGE		OSG NOM 0.0		INJ S/N						
OXID TRIM ORIFICE		F/U X VAL S/N /								
EXTRA PARAMETERS										
PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	12.4
62. CELL AMBIENT TEMPERATURE										
	IAMB	DEG. FAHR	81.1	129.0	166.2	192.3	212.4	226.5	280.6	295.6
63. FUEL CAVITY TEMP										
	FCT	DEG. FAHR	73.0	272.7	418.1	473.7	495.3	499.7	513.2	542.9
64. NOZZLE LAUND TEMP.										
	NLT	DEG. FAHR	72.5	621.4	754.4	843.5	892.7	916.9	928.2	929.4
65. SKIN TEMP. NO. 1										
	SKNT1	DEG. FAHR	73.0	73.2	73.0	72.8	72.6	72.4	71.5	71.1
66. SKIN TEMP. NO. 3										
	SKNT3	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 4										
	SKNT4	DEG. FAHR	72.7	72.8	72.9	74.9	81.0	92.6	220.0	306.7
68. SKIN TEMP. NO. 5										
	SKNT5	DEG. FAHR	72.8	96.7	131.0	172.1	222.8	277.6	529.2	533.2
69. SKIN TEMP. NO. 6										
	SKNT6	DEG. FAHR	72.2	95.0	132.1	181.2	242.0	303.1	574.2	689.3
70. SKIN TEMP. NO. 7										
	SKNT7	DEG. FAHR	72.0	89.9	118.0	154.5	202.6	259.2	557.4	675.8
71. SKIN TEMP. NO. 8										
	SKNT8	DEG. FAHR	72.3	93.5	124.0	163.2	211.1	270.0	580.8	731.2
72. SKIN TEMP. NO. 9										
	SKNT9	DEG. FAHR	72.7	74.8	75.4	76.6	77.9	80.0	105.4	124.0
73. SKIN TEMP. NO. 10										
	SKNT10	DEG. FAHR	71.8	74.3	75.0	76.2	77.9	80.8	115.8	146.8
74. SKIN TEMP. NO. 11										
	SKNT11	DEG. FAHR	72.7	159.3	393.4	603.8	786.2	941.9	1412.2	1528.2
75. SKIN TEMP. NO. 12										
	SKNT12	DEG. FAHR	79.1	164.9	395.8	609.9	802.1	968.1	1496.3	1629.4
76. SKIN TEMP. NO. 13										
	SKNT13	DEG. FAHR	72.4	163.8	392.9	577.0	720.2	826.8	1088.9	1135.1
77. SKIN TEMP. NO. 14										
	SKNT14	DEG. FAHR	73.1	150.4	387.6	567.8	729.8	858.7	1253.9	1341.6
78. SKIN TEMP. NO. 15										
	SKNT15	DEG. FAHR	72.4	73.0	73.0	73.6	74.6	75.9	83.6	86.2
79. SKIN TEMP. NO. 16										
	SKNT16	DEG. FAHR	73.0	74.4	74.4	75.2	76.9	79.3	94.5	100.8
80. SKIN TEMP. NO. 17										
	SKNT17	DEG. FAHR	73.5	74.3	74.4	74.6	75.0	76.0	87.6	93.8
81. SKIN TEMP. NO. 18										
	SKNT18	DEG. FAHR	77.0	77.2	77.4	77.8	79.4	81.6	99.8	108.9
82. SKIN TEMP. NO. 19										
	SKNT19	DEG. FAHR	72.6	78.8	102.9	130.7	164.5	199.4	346.1	404.7
83. SKIN TEMP. NO. 20										
	SKNT20	DEG. FAHR	71.3	83.4	110.6	137.4	168.8	200.8	347.2	416.3
84. SKIN TEMP. NO. 21										
	SKNT21	DEG. FAHR	71.6	94.9	132.5	175.3	219.5	262.6	457.2	534.5
85. SKIN TEMP. NO. 22										
	SKNT22	DEG. FAHR	70.7	87.8	123.3	165.6	209.2	251.4	431.8	508.1

BELL AEROSPACE TEXTRON

P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1 PAGE 01

BAROMETRIC PRESSURE		14.49	PSIA	T/C	AT 0.37830	IN2	MODEL NU	8911
TIME OF RUN		1104	HRS	T/C	AE 15.1360	IN2	TEST DATE	02/10/86
LENGTH OF RUN		30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR.		60/60	MMH	OXID	NOM 0.0	LBS/SEC	TEST NU	4338
OXID SP. GR.		60/60	N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE		0.0		DSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE							F/OX VAL S/N	/
EXTRA PARAMETERS								
PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0
62. CELL AMBIENT TEMPERATURE	IAMB	DEG. FAHR	84.2	138.9	173.1	193.5	208.3	220.0
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	283.2	358.7	420.9	437.8	442.3	442.3
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	280.4	668.9	729.9	763.8	780.1	791.0
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	268.1	266.6	259.8	250.5	240.5	230.5
66. SKIN TEMP. NO. 2	SKNT2	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	320.4	320.0	319.7	321.3	327.5	337.7
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	311.7	321.7	358.8	403.5	448.4	493.7
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	315.9	332.2	361.6	420.7	474.0	526.5
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	305.9	316.0	335.8	369.7	417.1	465.7
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	311.7	324.9	348.1	390.7	443.3	497.9
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	227.9	225.3	220.8	216.9	214.1	212.0
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	284.6	297.9	291.6	245.9	244.6	244.5
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	313.7	397.1	515.3	734.2	866.1	912.5
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	323.3	410.9	604.2	782.5	935.8	1060.6
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	301.6	388.4	550.7	672.8	756.3	815.5
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	302.6	380.5	547.9	693.4	794.2	878.4
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	253.0	252.6	245.0	232.9	219.6	206.6
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	265.4	265.9	261.9	255.0	246.9	238.4
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	235.5	236.4	236.6	236.9	237.1	237.3
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	248.3	248.4	248.8	249.4	249.9	250.4
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	273.3	278.1	290.2	305.4	321.3	336.0
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	282.0	293.7	317.2	338.9	359.8	383.9
84. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	285.7	307.5	337.3	365.8	398.0	426.1
85. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	301.5	319.6	349.7	385.4	421.7	453.8

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BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.49	PSIA	T/C	AT 0.37830	IN2	MODEL NU	8911
TIME OF RUN	1104	HR S	T/C	AE 15.1360	IN2	TEST DATE	02/10/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0	444	OXID	NOM 0.0	LBS/SEC	TEST NU	4338
OXID SP.GR. 60/60	0.0	N204	FS3	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			DSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	84.2	283.8	299.2
63. FUEL CAVITY TEMP	FCI	DEG.FAHR	283.2	427.9	424.8
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	280.4	779.5	773.2
65. SKIN TEMP. NO. 1	SKNT1	DEG.FAHR	268.1	131.4	114.3
66. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	320.4	723.3	913.5
67. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	311.7	913.8	1010.4
69. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	315.9	1009.9	1133.0
70. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	305.9	909.4	988.7
71. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	311.7	1005.4	1102.7
72. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	227.9	287.2	338.7
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	294.6	380.1	470.5
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	313.7	1383.5	1396.0
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	323.3	1557.6	1562.1
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	301.6	955.8	952.4
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	302.6	1135.0	1068.8
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	253.0	110.2	91.9
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	265.4	153.3	131.7
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	235.5	229.9	220.7
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	248.3	251.6	248.4
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	273.3	530.9	614.4
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	282.0	673.5	792.3
84. SKIN TEMP. NO. 20	SKNT20	DEG.FAHR	285.7	724.4	852.4
85. SKIN TEMP. NO. 21	SKNT21	DEG.FAHR	301.5	806.9	967.1

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# BELL AEROSPACE TEXTRON

P716 REV. 01/08/85 MODEL 9011 - PRELIMINARY TEST REPORT - 02/02 ENGINE S/N 1

PAGE 02

BAROMETRIC PRESSURE 14.45 PSIA  
TIME OF RUN 1043 HRS  
LENGTH OF RUN 30.0 SEC  
FUEL SP. GR. 60/60 0.0 M/M  
OXID SP. GR. 50/50 0.0 M/M

MODEL NU 8911  
TEST DATE 02/12/86  
TEST CELL A-2  
TEST NU 4339  
I/C S/N

FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

INJ S/N  
F/UX VAL S/N

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	78.4	132.6	173.8	202.2	226.4	244.1	295.5	316.0
63. FUEL CAVITY TEMP	FCI	DEG. FAHR	70.3	250.2	379.0	436.8	460.8	473.1	498.5	515.6
64. NOZZLE LAND TEMP	NLI	DEG. FAHR	69.5	567.4	687.0	770.7	836.6	864.9	886.8	871.4
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	70.1	70.2	70.0	69.7	69.4	69.2	68.4	68.0
66. SKIN TEMP. NO. 2	SKNT2	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	68.3	68.5	68.8	71.1	77.2	88.3	208.3	378.1
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	68.3	94.1	131.7	172.5	219.0	271.2	500.3	684.4
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	67.8	92.3	131.2	178.3	237.1	296.3	550.5	748.6
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	66.9	84.7	111.7	143.8	187.2	238.2	513.1	714.3
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	67.7	89.0	118.8	153.8	193.6	245.6	536.8	789.0
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	67.5	77.8	79.2	80.6	82.1	84.0	109.4	157.7
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	67.4	70.0	83.3	83.6	78.4	82.4	116.5	179.4
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	67.8	144.1	349.2	533.0	697.0	837.2	1269.2	1440.4
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	74.8	153.8	363.1	555.6	729.4	882.6	1357.2	1551.6
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	68.2	151.8	355.1	514.9	648.2	746.8	983.0	1053.9
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	70.0	149.8	364.3	526.3	658.6	781.5	1127.7	1254.0
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	69.4	70.2	70.2	70.7	71.6	72.8	80.1	84.2
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	70.7	71.4	71.4	72.1	73.5	75.7	89.4	100.0
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	71.3	71.9	71.9	72.1	72.5	73.0	81.3	92.7
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	88.1	88.6	88.7	89.5	90.5	92.0	103.9	116.9
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	69.5	76.5	97.5	118.9	142.0	168.5	300.7	424.3
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	68.3	78.4	101.3	125.0	151.4	179.7	303.2	412.1
84. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	67.2	89.5	121.8	154.9	190.3	225.4	387.8	536.8
85. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	66.9	83.3	116.5	157.2	200.6	241.6	406.0	545.1

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# BELL AEROSPACE TESTRON

PAGE 01

9716 REV. 01/08/96 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

BAROMETRIC PRESSURE 14.45 PSIA  
 TIME OF RUN 1043 HRS  
 LENGTH OF RUN 30.0 SEC  
 FUEL SP. GR. 60/60 0.0 444  
 OXID SP. GR. 60/60 0.0 N204  
 FUEL TRIM ORIFICE  
 OXID TRIM ORIFICE

MODEL NU 8911  
 TEST DATE 02/12/86  
 TEST CELL A-2  
 TEST NU 4339  
 I/C S/N  
 INJ S/N  
 F/U X VAL S/N

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	78.4	329.6	342.3
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	70.3	518.5	513.8
64. NOZZLE LAND TEMP.	NLI	DEG. FAHR	69.5	872.4	903.6
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	70.1	68.3	70.2
66. SKIN TEMP. NO. 2	SKNT2	DEG. FAHR	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	68.3	550.0	812.6
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	68.3	820.8	988.2
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	67.8	892.3	1065.8
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	66.9	845.3	981.7
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	67.7	939.6	1260.0
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	67.5	226.2	327.5
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	67.4	686.2	838.1
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	67.8	1516.7	1556.7
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	74.8	1627.6	1667.0
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	68.2	1076.6	1082.6
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	70.0	1286.7	1294.6
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	69.4	85.6	84.4
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	70.7	106.6	112.7
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	71.3	104.3	120.0
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	88.1	124.1	140.9
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	69.5	536.7	710.7
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	68.3	507.8	652.0
84. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	67.2	667.3	869.2
85. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	66.9	667.1	852.9

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BELL AEROSPACE TEXTRON

PAGE 10

P716 REV. 01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/12/86 ENGINE S/N 1

BAROMETRIC PRESSURE	14.45	PSTA	T/C	AT 0.37830	IN2	MODEL NO	8911
TIME OF RUN	1418	HRS	T/C	AE 15.1360	IN2	TEST DATE	02/12/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4340
OXID SP. GR. 60/60	0.0	N204	ESG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE			F/OX	VAL S/N			/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	79.8	127.8	164.2	180.5	197.2	209.1	252.4	271.9
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	76.4	237.4	379.3	446.8	479.0	499.2	546.8	562.2
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	75.3	561.4	618.5	763.8	827.6	813.5	928.2	951.4
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	79.6	79.7	79.5	79.0	78.6	78.2	76.5	75.3
66. SKIN TEMP. NO. 2	SKNT2	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	78.3	78.4	78.5	80.0	84.7	93.4	187.0	331.8
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	77.5	95.3	119.4	145.3	178.9	217.1	403.2	563.5
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	77.4	94.6	121.4	154.7	198.6	244.8	457.9	636.0
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	76.2	87.1	105.3	127.5	157.9	194.4	427.3	615.4
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	76.4	89.6	109.0	133.0	163.8	196.5	439.5	670.1
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	74.7	78.0	78.8	79.7	81.1	83.0	105.0	148.7
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	75.5	73.0	87.7	114.9	92.3	80.4	104.3	171.5
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	76.8	145.9	308.8	465.1	606.2	730.9	1162.0	1374.4
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	83.2	153.0	320.6	483.4	630.6	764.6	1234.8	1477.6
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	75.6	152.3	328.0	478.1	596.3	694.8	958.7	1057.6
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	77.1	144.5	315.1	470.7	606.8	722.3	1080.4	1244.8
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	75.3	76.1	75.9	76.1	76.4	77.2	84.0	90.6
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	76.9	77.2	77.1	77.5	78.6	80.3	94.2	108.0
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	77.4	77.5	77.5	77.5	78.1	78.6	85.8	97.3
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	94.3	94.0	94.2	94.8	95.3	96.7	106.4	117.3
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	74.8	79.9	94.6	111.1	125.6	144.5	246.9	340.8
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	73.6	81.2	95.8	111.7	125.5	143.0	234.1	317.6
84. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	72.5	86.5	107.3	125.7	148.1	172.5	289.0	390.3
85. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	72.4	84.7	107.0	128.9	154.4	180.9	296.3	392.4

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# BELL AEROSPACE TEST REPORT

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PT16 REV. 01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

BAROMETRIC PRESSURE	14.45 PSIA	T/C	AT 0.37830 IN2	MODEL NO	8911
TIME OF RUN	1418 HRS	T/C	AE 15.1360 IN2	TEST DATE	02/11/86
LENGTH OF RUN	30.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60	OXID	NOM 0.0 LBS/SEC	TEST NO	4340
OXID SP. GR.	60/60	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE	0.0 N2O4	OSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/U VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	79.8	287.0	305.5
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	76.4	568.4	571.7
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	75.3	959.0	973.1
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	79.6	75.2	77.0
66. SKIN TEMP. NO. 2	SKNT2	DEG. FAHR	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	78.3	483.8	736.5
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	77.5	701.2	882.6
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	77.4	777.6	971.3
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	76.2	753.5	909.8
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	76.4	872.3	1157.5
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	74.7	213.7	323.0
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	75.5	251.5	421.3
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	76.8	1477.5	1556.8
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	83.2	1596.6	1678.2
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	75.6	1099.3	1129.5
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	77.1	1317.1	1344.4
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	75.3	95.0	98.4
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	76.9	118.4	126.2
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	77.4	109.4	126.7
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	94.3	124.9	142.6
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	74.8	432.4	575.1
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	73.6	392.6	513.9
84. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	72.5	486.7	646.7
85. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	72.4	482.1	628.7

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BELL AEROSPACE EXTRUN

PAGE 10

MODEL 8911 - PRELIMINARY TEST REPORT - 02/12/86 ENGINE S/N 1

PT16 REV. 01/28/86

BAROMETRIC PRESSURE 14.45 PSIA  
 TIME OF RUN 1430 HRS  
 LENGTH OF RUN 30.0 SEC  
 FUEL SP. GR. 60/60 0.0 M4H  
 OXID SP. GR. 60/60 0.0 N2O4  
 FUEL TRIM ORIFICE  
 OXID TRIM ORIFICE

T/C AT 0.37830 IN2  
 T/C AE 15.1360 IN2  
 FUEL NOM 0.0 LBS/SEC  
 OXID NOM 0.0 LBS/SEC  
 FSG NOM 0.0  
 OSG NOM 0.0

MODEL NU 8911  
 TEST DATE 02/12/86  
 TEST CELL A-2  
 TEST NU 4341  
 T/C S/N  
 INJ S/N  
 F/U VAL S/N /

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	85.0	154.4	200.5	216.3	227.8	237.5	268.9	282.3
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	333.7	391.3	432.4	439.3	436.4	432.6	420.3	414.1
64. NOZZLE LAND TEMP	NLT	DEG. FAHR	331.7	697.5	745.4	759.6	765.0	766.2	752.4	740.1
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	298.9	296.8	288.8	278.1	266.8	255.5	205.8	170.4
66.			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	360.4	360.0	359.7	361.6	367.9	379.7	486.2	615.4
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	349.3	368.3	406.0	446.0	489.4	531.5	710.7	832.5
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	355.1	374.2	415.9	462.9	512.4	560.1	765.0	903.3
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	362.9	353.2	376.3	413.9	456.3	501.7	703.2	827.6
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	350.4	364.5	393.7	433.3	479.2	528.0	751.1	889.8
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	265.0	264.0	259.8	256.6	254.4	252.6	262.0	292.6
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	315.7	317.2	305.7	283.2	281.4	280.5	301.8	353.3
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	352.2	441.7	610.9	756.9	874.8	965.3	1204.9	1286.8
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	362.6	458.6	637.9	798.4	930.1	1034.0	1324.9	1409.1
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	343.0	433.9	583.0	691.2	760.7	806.1	897.1	912.4
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	345.1	431.5	592.2	724.0	812.3	880.2	1045.4	1058.5
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	306.4	305.2	295.3	280.0	263.1	246.4	179.9	137.6
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	318.3	318.7	313.7	305.1	295.0	284.2	234.8	196.7
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	301.3	302.0	302.0	302.3	302.6	302.6	302.6	300.4
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	311.1	311.4	311.6	312.0	312.5	312.5	308.7	300.2
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	334.0	336.9	353.7	375.0	398.0	417.8	513.4	594.6
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	319.6	328.7	340.9	356.9	372.3	389.9	456.2	512.3
84. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	340.6	361.8	393.8	424.5	453.0	480.0	601.5	711.2
85. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	327.0	338.5	360.6	389.1	415.7	439.0	519.5	625.4

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BELL AEROSPACE TEXTRON

PAGE 06

PT16 REV. 01/08/86 MODEL 891 - PRELIMINARY TEST REPORT - 02/02 ENGINE S/N 1

BAROMETRIC PRESSURE	14.45	PSIA	T/C	AT 0.37830	IN2	MODEL NO	8911
TIME OF RUN	14.30	HRS	T/C	AE 15.1360	IN2	TEST DATE	02/12/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4341
OXID SP. GR. 60/60	0.0	N204	ESG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			DSG	NOM 0.0		INJ S/N	/
OXID TRIM ORIFICE						F/OX VAL S/N	

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	85.0	293.2	305.3
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	333.7	409.4	404.6
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	331.7	736.7	721.8
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	298.9	145.1	120.3
66. SKIN TEMP. NO. 2	SKNT2	DEG. FAHR	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	360.4	736.6	907.0
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	349.3	913.4	1002.5
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	355.1	988.5	1092.0
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	342.9	901.5	973.7
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	350.4	970.6	1049.8
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	265.0	327.8	375.0
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	315.7	459.7	680.1
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	352.2	1306.4	1311.2
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	362.6	1427.6	1429.4
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	343.0	912.0	906.2
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	345.1	1000.6	950.2
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	306.4	117.6	95.9
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	318.3	170.4	160.1
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	301.3	296.8	281.7
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	311.1	290.5	273.7
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	334.0	672.4	778.9
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	319.6	556.7	632.3
84. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	340.6	799.5	949.0
85. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	327.0	700.4	813.6

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# BELL AEROSPACE TEXTRON

PAGE 1

MODEL 891 - PRELIMINARY TEST REPORT - 02/12/86 ENGINE S/N 1

0716 REV. 01/08/86

MODEL NO 8911  
TEST DATE 02/12/86  
TEST CELL A-2  
TEST NO 4342  
I/C S/N  
INJ S/N  
F/OX VAL S/N

I/C AT 0-37830 IN2  
I/C AE 15-1360 IN2  
FUEL NOM 0.0 LBS/SEC  
OXID NOM 0.0 LBS/SEC  
ESG NOM 0.0

BAROMETRIC PRESSURE 14.45 PSIA  
TIME OF RUN 1438 HRS  
LENGTH OF RUN 8.8 SEC  
FUEL SP. GR. 60/60 0.0 MMH  
OXID SP. GR. 60/60 0.0 N204  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	8.2
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	89.8	142.4	191.5	221.6	247.8	271.9	318.5
63. FUEL CAVITY TEMP	FCI	DEG. FAHR	365.2	475.2	580.4	624.1	640.8	649.0	655.1
64. NOZZLE LAND TEMP.	NLI	DEG. FAHR	363.0	451.8	479.9	1059.4	1088.8	1105.3	1131.2
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	408.3	405.2	391.3	371.8	354.1	336.8	290.2
66.			0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	509.0	507.7	507.3	508.7	514.4	524.8	580.5
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	488.3	496.1	516.8	546.3	579.5	623.0	756.1
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	497.5	506.4	531.1	566.1	612.3	661.4	808.1
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	474.1	478.5	492.2	520.4	558.3	605.8	767.9
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	486.0	491.4	506.1	534.8	571.3	622.0	852.2
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	349.5	345.4	339.6	334.4	330.2	327.8	330.4
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	419.4	420.0	387.7	372.3	367.9	365.8	371.6
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	467.9	551.3	746.6	929.6	1086.8	1217.5	1516.3
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	480.5	562.2	758.4	948.3	1114.4	1254.4	1588.0
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	419.9	508.4	700.0	854.6	970.7	1059.2	1217.7
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	421.9	502.2	706.0	884.6	1029.6	1150.4	1410.7
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	334.7	331.1	327.6	315.5	300.9	285.9	242.7
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	347.8	348.0	344.4	339.8	332.5	323.2	295.8
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	337.5	337.9	338.0	340.2	342.1	339.7	339.6
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	340.0	340.2	340.2	340.6	340.6	340.7	340.9
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	483.9	489.6	509.8	532.5	554.4	574.7	651.0
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	451.4	460.2	480.8	501.0	521.3	541.6	603.5
84. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	517.6	535.5	563.3	591.9	624.5	652.3	736.0
85. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	483.6	497.7	528.3	558.0	587.5	620.9	707.1

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OF POOR QUALITY

## BELL AEROSPACE TEXTRON

PAGE 01

DTIC REV. 01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/02 ENGINE S/N 1

BAROMETRIC PRESSURE 14.45 PSIA T/C AT 0.37830 IN2 MODEL NU 8911  
TIME OF RUN 1445 HRS T/C AE 15.1360 IN2 TEST DATE 02/12/86

LENGTH OF RUN 11.3 SEC FUEL NOM 0.0 LBS/SEC TEST CELL A-2

FUEL SP. GR. 60/60 0.0 MM-H FUEL NOM 0.0 LBS/SEC TEST NU 4343

OXID SP. GR. 60/60 0.0 N2O4 T/C S/N

FUEL TRIM ORIFICE OSG NOM 0.0 INJ S/N

OXID TRIM ORIFICE OSG NOM 0.0 F/OX VAL S/N /

## EXTRA PARAMETERS

PARAMETER SYMBOL UNITS STATIC 1.0 2.0 3.0 4.0 5.0 10.7

## 62. CELL AMBIENT TEMPERATURE

63. FUEL CAVITY TEMP

64. NOZZLE LAND TEMP

65. SKIN TEMP. NO. 1

66. SKIN TEMP. NO. 3

67. SKIN TEMP. NO. 4

68. SKIN TEMP. NO. 5

69. SKIN TEMP. NO. 6

70. SKIN TEMP. NO. 7

71. SKIN TEMP. NO. 8

72. SKIN TEMP. NO. 9

73. SKIN TEMP. NO. 10

74. SKIN TEMP. NO. 11

75. SKIN TEMP. NO. 12

76. SKIN TEMP. NO. 13

77. SKIN TEMP. NO. 14

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332. SKIN TEMP. NO. 269

333. SKIN TEMP. NO. 270

TESTS 4344 - 4346 CELL A-2 DATE 02/14/86 - 02/14/86 TEST REF. 911-E-001

## TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N

INJECTOR S/N

F/OX VALVE S/N

T/C AT (AMB) -37830 IN2

T/C AE (AMB) \*\*\*\*\* IN2

FSG NUM (60/60)

USG NUM (60/60)

FUEL NUM

LBS/SEC

LBS/SEC

## PERFORMANCE TEST DATA SUMMARY

## MEASURED

TEST NO.	OUR DATA	PN1 PRESS	ROUG	TEST	COR	***RATIO***	WTOT	C*	***F INF***	**ISP INF**	CF	OFF	FFP	OFT	FFT	TOTAL	DPO	DPT	PA
SEC	SEC	SEC	PERC	LB/SEC	FT/S	LBS	LBS	SEC	SEC	SEC	INE	PSIA	PSIA	DEG.	FAHR	LB-SEC	PSID	PSID	PSIA
4344	30.0	1.0	73.3	0.0	4.045	0.0	.125673	7102.	50.51	0.0	401.9	0.0	1.822	201.	190.	62.	64.	0.0	0.0
		2.0	73.6	0.0	4.042	0.0	.125941	7127.	51.07	0.0	405.8	0.0	1.833	201.	191.	63.	64.	0.0	0.0
		3.0	73.9	0.0	4.033	0.0	.125850	7154.	51.49	0.0	409.1	0.0	1.841	201.	191.	63.	62.	0.0	0.0
		4.0	74.1	0.0	4.024	0.0	.125904	7167.	51.74	0.0	411.0	0.0	1.846	201.	192.	64.	60.	0.0	0.0
		5.0	74.3	0.0	4.013	0.0	.125944	7184.	51.95	0.0	412.5	0.0	1.849	201.	192.	65.	57.	0.0	0.0
		10.0	74.9	0.0	3.969	0.0	.126205	7226.	52.36	0.0	414.9	0.0	1.849	201.	192.	65.	47.	0.0	0.0
		15.0	75.2	0.0	3.955	0.0	.126360	7247.	52.39	0.0	414.6	0.0	1.842	201.	192.	62.	43.	0.0	0.0
		20.0	75.4	0.0	3.943	0.0	.126554	7256.	52.49	0.0	414.8	0.0	1.841	201.	192.	61.	40.	0.0	0.0
		29.4	75.7	0.0	3.943	0.0	.126968	7260.	52.45	0.0	413.1	0.0	1.832	201.	192.	58.	37.	0.0	0.0

4345

30.0	1.0	76.2	0.0	3.063	0.0	.122766	7545.	51.92	0.0	422.9	0.0	1.805	185.	228.	65.	52.	0.0	0.0	0.0
	2.0	76.2	0.0	3.059	0.0	.123094	7537.	52.34	0.0	425.2	0.0	1.816	185.	228.	63.	50.	0.0	0.0	0.0
	3.0	76.2	0.0	3.054	0.0	.123215	7537.	52.60	0.0	426.9	0.0	1.824	185.	228.	62.	48.	0.0	0.0	0.0
	4.0	76.3	0.0	3.049	0.0	.123317	7537.	52.77	0.0	427.9	0.0	1.828	185.	228.	62.	47.	0.0	0.0	0.0
	5.0	76.4	0.0	3.046	0.0	.123397	7538.	52.93	0.0	428.9	0.0	1.832	185.	229.	62.	46.	0.0	0.0	0.0
	10.0	76.5	0.0	3.031	0.0	.123705	7535.	53.10	0.0	429.3	0.0	1.835	185.	228.	60.	40.	0.0	0.0	0.0
	15.0	76.6	0.0	3.024	0.0	.123929	7528.	52.94	0.0	427.2	0.0	1.827	185.	228.	59.	37.	0.0	0.0	0.0
	20.0	76.7	0.0	3.020	0.0	.124054	7526.	52.73	0.0	425.1	0.0	1.819	185.	228.	58.	35.	0.0	0.0	0.0
	29.4	76.8	0.0	3.023	0.0	.124367	7521.	52.23	0.0	419.9	0.0	1.798	185.	228.	56.	34.	0.0	0.0	0.0

4346

9.2	1.0	75.0	0.0	5.134	0.0	.130349	7007.	52.34	0.0	401.5	0.0	1.845	218.	162.	66.	51.	0.0	0.0	0.0
	2.0	75.1	0.0	5.139	0.0	.130671	6996.	52.74	0.0	403.6	0.0	1.858	217.	162.	65.	51.	0.0	0.0	0.0
	3.0	75.1	0.0	5.135	0.0	.130765	6997.	52.93	0.0	404.8	0.0	1.863	217.	163.	64.	50.	0.0	0.0	0.0
	4.0	75.2	0.0	5.131	0.0	.130830	7002.	53.00	0.0	405.1	0.0	1.863	217.	163.	64.	49.	0.0	0.0	0.0
	5.0	75.3	0.0	5.127	0.0	.130906	7005.	52.98	0.0	404.7	0.0	1.860	217.	163.	64.	48.	0.0	0.0	0.0
	8.6	75.5	0.0	5.117	0.0	.131101	7019.	52.55	0.0	400.8	0.0	1.839	217.	164.	62.	46.	0.0	0.0	0.0

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OF POOR QUALITY



# BELL AEROSPACE TESTRDN

P716 REV.01/08/86 MODEL 9911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE 01

BAROMETRIC PRESSURE	14.45	PSIA	T/C	AT 0.37830	IN2	MODEL NU	8911
TIME OF RUN	1519	HP S	T/C	AE 15.1360	IN2	TEST DATE	02/14/86
LENGTH OF RUN	30.0	SEC	FUEL NOM	0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MMH	OXID NOM	0.0	LBS/SEC	TEST NU	4344
OXID SP. GR. 60/60	0.0	N204	FSG NOM	0.0		T/C S/N	
FUEL TRIM ORIFICE			DSG NOM	0.0		INJ S/N	
OXID TRIM ORIFICE					F/OX VAL S/N		

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	IAMB	DEG. FAHR	71.7	132.8	116.4	209.6	232.6	256.2	313.4	339.9
63. FUEL CAVITY TEMP	FCV	DEG. FAHR	66.0	225.1	354.3	412.6	438.2	448.1	455.7	462.0
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	65.1	562.6	666.3	745.2	797.1	835.6	868.9	871.1
65. SKIN TEMP. N2. 1	SKNT1	DEG. FAHR	62.3	62.7	62.6	62.3	62.0	61.8	61.6	61.6
66. SKIN TEMP. N2. 3	SKNT3	DEG. FAHR	67.4	58.4	35.9	41.7	58.7	96.6	331.5	540.9
67. SKIN TEMP. N2. 4	SKNT4	DEG. FAHR	62.7	87.5	125.3	166.7	214.5	264.8	481.4	648.7
69. SKIN TEMP. N2. 5	SKNT5	DEG. FAHR	62.5	88.2	128.1	174.1	232.4	293.8	556.7	756.1
70. SKIN TEMP. N2. 6	SKNT6	DEG. FAHR	63.4	73.3	90.2	110.6	132.1	160.8	330.1	445.8
71. SKIN TEMP. N2. 7	SKNT7	DEG. FAHR	62.3	85.9	114.6	154.7	215.3	321.8	748.8	1016.6
72. SKIN TEMP. N2. 8	SKNT8	DEG. FAHR	62.5	66.5	61.5	68.6	70.4	72.6	95.9	134.2
73. SKIN TEMP. N2. 9	SKNT9	DEG. FAHR	61.9	64.6	65.6	67.0	68.5	70.6	104.8	173.9
74. SKIN TEMP. N2. 10	SKNT10	DEG. FAHR	63.4	134.2	324.5	497.9	646.5	772.8	1156.0	1302.7
75. SKIN TEMP. N2. 11	SKNT11	DEG. FAHR	69.9	148.8	358.6	552.6	726.9	879.5	1348.2	1531.5
76. SKIN TEMP. N2. 12	SKNT12	DEG. FAHR	64.0	141.5	336.4	493.9	610.1	699.8	902.7	959.2
77. SKIN TEMP. N2. 13	SKNT13	DEG. FAHR	65.1	138.3	340.6	515.1	653.2	761.2	1030.4	1102.7
78. SKIN TEMP. N2. 14	SKNT14	DEG. FAHR	64.8	65.2	65.2	65.7	66.4	67.8	74.8	78.7
79. SKIN TEMP. N2. 15	SKNT15	DEG. FAHR	66.1	66.6	66.8	67.5	68.9	70.9	84.8	95.4
80. SKIN TEMP. N2. 16	SKNT16	DEG. FAHR	66.1	66.1	66.3	66.9	67.5	68.3	78.4	90.4
81. SKIN TEMP. N2. 17	SKNT17	DEG. FAHR	68.3	69.4	68.4	68.9	70.4	72.8	89.4	105.0
82. SKIN TEMP. N2. 18	SKNT18	DEG. FAHR	63.5	70.5	94.6	122.5	152.6	184.2	317.4	426.3
83. SKIN TEMP. N2. 19	SKNT19	DEG. FAHR	62.6	74.4	101.7	126.0	152.9	181.0	317.0	442.1
84. SKIN TEMP. N2. 20	SKNT20	DEG. FAHR	61.3	86.1	125.5	167.5	210.8	252.7	435.2	583.0
85. SKIN TEMP. N2. 21	SKNT21	DEG. FAHR	61.1	78.3	112.8	149.7	188.8	227.5	397.9	547.9

# BELL AEROSPACE TEXTRON

PAGE 04

MODEL 8911 - PRELIMINARY TEST REPORT - D2/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.45	PSIA	T/C	AT 0.37830	IN2	MODEL NO	8911
TIME OF RUN	1519	HRS	T/C	AE 15.1360	IN2	TEST DATE	02/14/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60	MM-H	OXID	NOM 0.0	LBS/SEC	TEST NO	4344
OY IN SP. GR.	60/60	N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM BRIFICE			DSG	NOM 0.0		INJ S/N	
OXID TRIM DRIFICE						F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	IAMB	DEG. FAHR	71.7	350.4	370.9
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	66.0	469.2	469.8
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	65.1	880.7	885.7
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	62.3	61.9	63.4
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	0.0	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	62.4	665.5	883.4
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	62.7	770.6	920.2
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	62.5	896.6	1073.4
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	63.4	513.5	572.8
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	62.3	999.2	1082.3
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	62.5	190.7	282.8
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	61.9	260.1	435.5
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	63.4	1363.2	1397.3
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	69.9	1602.7	1648.6
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	64.0	979.2	986.0
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	65.1	1124.9	1142.7
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	64.8	80.3	80.8
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	66.1	102.4	110.3
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	66.1	101.1	117.0
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	68.3	118.8	137.1
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	63.5	519.1	654.8
83. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	62.6	556.1	735.7
84. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	61.3	712.1	895.4
85. SKIN TEMP. NO. 22	SKNT22	DEG. FAHR	61.1	682.9	892.8

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BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/96

BAROMETRIC PRESSURE		14.45	PSTA	T/C	AT 0.37830	IN2	MODEL NO	8911		
TIME OF RUN		1525	HRS	T/C	AE 15.1360	IN2	TEST DATE	02/14/86		
LENGTH OF RUN		30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2		
FUEL SP. GR.		60/60	0.0	MMH	OXID NOM 0.0	LBS/SEC	TEST NU	4345		
OXID SP. GR.		60/60	0.0	N204	FSG NOM 0.0		T/C S/N			
FUEL TRIM ORIFICE					OSG NOM 0.0		INJ S/N			
OXID TRIM ORIFICE							F/OX VAL S/N	/		
EXTRA PARAMETERS										
PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	81.4	158.3	197.1	219.0	234.9	248.4	284.5	306.0
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	311.1	360.2	393.8	399.3	397.7	396.2	380.1	376.0
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	307.3	688.6	725.2	738.4	737.1	730.2	712.6	
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	370.0	367.1	355.5	341.1	328.7	313.3	265.3	194.9
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	526.1	524.0	507.9	483.0	469.7	477.9	635.6	771.7
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	488.3	502.8	532.7	564.7	600.5	639.3	780.8	880.1
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	502.0	518.5	553.3	596.0	645.1	690.4	873.6	986.6
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	290.0	295.0	307.9	326.6	348.6	376.7	483.4	541.1
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	480.4	492.2	515.7	549.8	591.8	640.3	846.5	971.1
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	340.3	335.8	329.0	322.9	318.0	313.9	308.9	326.7
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	432.1	422.6	420.9	395.7	367.1	355.6	358.1	397.7
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	475.6	548.1	687.3	802.6	897.7	972.5	1164.4	1218.1
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	492.8	578.6	745.8	891.8	1006.2	1101.1	1346.7	1411.4
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	402.3	478.9	600.1	688.7	745.9	782.9	857.5	868.1
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	411.5	487.2	626.7	734.3	804.9	860.5	984.7	957.5
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	255.1	254.3	246.0	232.9	218.4	204.4	148.5	117.6
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	277.5	278.3	274.0	266.4	257.4	248.1	205.4	173.7
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	234.7	235.8	236.0	236.5	237.0	237.0	236.0	231.2
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	261.0	261.5	261.8	262.0	262.2	262.8	263.9	263.4
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	468.7	470.8	478.0	487.1	496.7	506.0	547.5	578.8
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	487.1	498.6	518.2	537.7	556.0	571.7	663.0	737.5
84. SKIN TEMP. NO. 20	SKNT20	DEG. FAHR	523.2	542.0	562.5	583.2	606.0	627.6	710.4	775.6
85. SKIN TEMP. NO. 21	SKNT21	DEG. FAHR	551.0	565.6	592.7	625.0	652.7	678.6	788.0	885.4

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## BELL AEROSPACE TEXTRON

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P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

BAROMETRIC PRESSURE	14.45 PSIA	T/C	AT 0.37830 IN2	MODEL NU	8911
TIME OF RUN	1525 HRS	T/C	AE 15.1360 IN2	TEST DATE	02/14/86
LENGTH OF RUN	30.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0 MMH	OXID	NOM 0.0 LBS/SEC	TEST NU	4345
OXID SP.GR. 60/60	0.0 N204	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE		DSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/DX VAL S/N	/
EXTRA PARAMETERS					
PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	IAMB	DEG.FAHR	81.4	317.2	331.3
63. FUEL CAVITY TEMP	FCT	DEG.FAHR	311.1	372.8	370.8
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	307.3	711.2	708.0
65. SKIN TEMP. NO. 1	SKNT1	DEG.FAHR	370.0	161.1	124.5
66. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	526.1	871.5	985.4
67. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	488.3	942.8	1008.7
69. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	502.0	1064.3	1149.8
70. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	290.0	567.2	591.2
71. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	480.4	1024.2	1094.7
72. SKIN TEMP. NO. 8	SKNT8	DEG.FAHR	340.3	345.1	385.4
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	432.1	479.3	740.1
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	475.6	1234.7	1236.9
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	492.8	1424.4	1424.7
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	402.3	865.1	860.3
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	411.5	950.4	940.8
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	255.1	102.6	86.3
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	277.5	151.7	129.5
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	234.7	225.0	213.2
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	261.0	261.8	257.2
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	468.7	609.0	658.1
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	487.1	796.4	897.1
84. SKIN TEMP. NO. 20	SKNT20	DEG.FAHR	523.2	834.6	921.7
85. SKIN TEMP. NO. 21	SKNT21	DEG.FAHR	551.0	967.6	1098.8

BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - D2/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE 14.45 PSTA		T/C	AT 0.37830	IN2	MODEL NU	8911
TIME OF RUN 1530 HRS		T/C	AE 15.1360	IN2	TEST DATE	02/14/86
LENGTH OF RUN 9.2 SEC		FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60 0.0 MMH		OXID	NOM 0.0	LBS/SEC	TEST NU	4346
OXID SP.GR. 60/60 0.0 N204		FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE		DSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE		F/U/X VAL S/N /				
EXTRA PARAMETERS						
PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0
62. CELL AMBIENT TEMPERATURE						
	TAMB	DEG. FAHR	84.9	142.2	192.6	227.6
63. FUEL CAVITY TEMP.						
	FCT	DEG. FAHR	354.1	466.3	561.7	595.9
64. NOZZLE LAND TEMP.						
	NLT	DEG. FAHR	351.8	836.4	938.3	1015.4
65. SKIN TEMP. NO. 1						
	SKNT1	DEG. FAHR	424.0	419.9	405.3	383.0
66. SKIN TEMP. NO. 3						
	SKNT3	DEG. FAHR	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 4						
	SKNT4	DEG. FAHR	541.9	540.2	539.1	530.0
68. SKIN TEMP. NO. 5						
	SKNT5	DEG. FAHR	516.8	525.4	566.1	571.8
69. SKIN TEMP. NO. 6						
	SKNT6	DEG. FAHR	529.3	538.8	562.8	601.6
70. SKIN TEMP. NO. 7						
	SKNT7	DEG. FAHR	325.3	326.4	332.6	352.0
71. SKIN TEMP. NO. 8						
	SKNT8	DEG. FAHR	516.0	522.0	538.6	569.9
72. SKIN TEMP. NO. 9						
	SKNT9	DEG. FAHR	360.7	356.3	349.9	343.9
73. SKIN TEMP. NO. 10						
	SKNT10	DEG. FAHR	441.2	428.8	394.5	391.3
74. SKIN TEMP. NO. 11						
	SKNT11	DEG. FAHR	488.8	571.3	745.8	908.6
75. SKIN TEMP. NO. 12						
	SKNT12	DEG. FAHR	504.6	600.4	801.0	987.3
76. SKIN TEMP. NO. 13						
	SKNT13	DEG. FAHR	425.4	517.3	693.8	830.0
77. SKIN TEMP. NO. 14						
	SKNT14	DEG. FAHR	431.9	522.3	713.5	877.8
78. SKIN TEMP. NO. 15						
	SKNT15	DEG. FAHR	319.6	318.7	311.1	298.3
79. SKIN TEMP. NO. 16						
	SKNT16	DEG. FAHR	338.6	339.2	335.5	328.1
80. SKIN TEMP. NO. 17						
	SKNT17	DEG. FAHR	306.3	306.8	307.1	307.7
81. SKIN TEMP. NO. 18						
	SKNT18	DEG. FAHR	337.0	337.3	337.3	337.2
82. SKIN TEMP. NO. 19						
	SKNT19	DEG. FAHR	490.5	495.2	514.5	537.1
83. SKIN TEMP. NO. 20						
	SKNT20	DEG. FAHR	519.0	531.7	556.1	579.2
84. SKIN TEMP. NO. 21						
	SKNT21	DEG. FAHR	530.5	552.4	585.5	624.2
85. SKIN TEMP. NO. 22						
	SKNT22	DEG. FAHR	564.1	581.8	617.4	651.5

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TESTS 4347 - 4347 CELL A-2 DATE 02/21/86 - 02/21/86 TEST REF. 911-E-001

## TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N

INJECTOR S/N

F/OX VALVE S/N

T/C AT(AMB) -37830 IN2

T/C AE(AMB) \*\*\*\*\* IN2

FSG NUM (60/60) 0.0

USG NUM (60/60) 0.0

FUEL NUM 0.0 LBS/SEC

OXID NUM 0.0 LBS/SEC

## PERFORMANCE TEST DATA SUMMARY

## MEASURED

TEST NO.	OUR DATA	*****C*****	*****RATIO*****	WTOT	C*	***F INF***	**ISP INF**	CF	OPF	F/P	UFT	FFT	TOTAL IMPULSE	DPF	PA
SEC	SEC	PSIA	PERC	TEST	COR	TEST	COR	INF	PSIA	PSIA	DEG.	FAHR	LB-SEC	PSID	PSIA
30.0	1.0	73.1	0.0	4.030	0.0	125545	7095.	50.21	0.0	399.9	0.0	1.815	-1.0	1.58.	60.
	2.0	73.6	0.0	4.023	0.0	125641	7139.	50.65	0.0	403.1	0.0	1.818	-1.0	1.58.	60.
	3.0	73.3	0.0	4.014	0.0	125685	7150.	50.82	0.0	404.3	0.0	1.821	-1.0	1.58.	59.
	4.0	74.0	0.0	4.005	0.0	125729	7167.	51.04	0.0	405.9	0.0	1.824	-1.0	1.58.	57.
	5.0	74.1	0.0	3.996	0.0	125787	7178.	51.19	0.0	407.0	0.0	1.826	-1.0	1.58.	55.
	10.0	74.7	0.0	3.963	0.0	125904	7226.	51.68	0.0	410.4	0.0	1.829	-1.0	1.58.	47.
	15.0	74.9	0.0	3.943	0.0	125954	7244.	51.81	0.0	411.4	0.0	1.828	-1.0	1.58.	43.
	20.0	75.1	0.0	3.935	0.0	126029	7259.	51.92	0.0	412.0	0.0	1.828	-1.0	1.58.	41.
	29.4	75.3	0.0	3.935	0.0	126245	7263.	51.92	0.0	411.2	0.0	1.823	-1.0	1.56.	40.

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BELL AEROSPACE TEXTRON

P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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BAROMETRIC PRESSURE		14.45	PSIA	T/C	AT 0.37830	IN2	MODEL NU	8911
TIME OF RUN		1118	HRS	T/C	AE 15.1360	IN2	TEST DATE	02/21/86
LENGTH OF RUN		30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR.		60/60	MMH	OXID	NOM 0.0	LBS/SEC	TEST NU	4347
OXID SP. GR.		60/60	N2O4	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE		0.0		DSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE		0.0					F/OX VAL S/N	/
EXTRA PARAMETERS								
PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0
62. CELL AMBIENT TEMPERATURE	IAMB	DEG. FAHR	63.2	139.4	177.3	206.8	228.6	251.5
63. FUEL CAVITY TEMP	FCI	DEG. FAHR	61.6	231.3	360.0	418.5	441.6	449.7
64. NOZZLE LAND TEMP.	NLI	DEG. FAHR	60.6	561.7	665.9	737.9	784.3	817.2
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	61.0	60.8	60.6	60.1	59.7	59.5
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	61.0	61.3	61.4	63.2	69.6	81.3
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	61.2	90.3	129.7	171.5	218.1	269.5
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	60.6	88.7	129.6	178.4	239.5	300.4
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	59.9	78.4	107.7	142.3	184.7	234.7
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	60.8	84.3	116.5	163.3	243.2	329.3
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	60.6	62.9	63.4	64.4	65.7	67.3
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	59.4	62.8	63.6	64.9	66.8	69.4
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	60.9	142.1	345.8	511.6	683.3	792.7
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	63.0	151.8	363.0	556.8	729.4	877.5
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	60.2	152.9	351.9	510.4	628.8	719.5
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	60.8	143.1	354.2	515.1	661.6	778.2
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	60.7	60.8	60.9	61.6	62.3	63.4
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	55.3	56.6	56.5	57.3	58.8	60.7
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	61.9	62.8	62.7	63.0	63.4	64.1
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	63.0	63.2	63.2	63.8	65.4	67.8
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	59.9	69.6	92.0	115.0	137.3	163.1
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	59.4	69.8	95.7	120.6	145.5	173.9
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	60.6	127.2	330.4	528.2	705.3	859.1
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	60.4	132.4	321.7	498.4	655.1	791.7

BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PT16 REV.01/08/86

MODEL NO 8911  
TEST DATE 02/21/86  
TEST CELL A-2  
TEST NO 4347  
T/C S/N  
INLS/N

BAROMETRIC PRESSURE 14.45 PSIA  
TIME OF RUN 1118 HRS  
LENGTH OF RUN 30.0 SEC  
FUEL SP.GR. 60/60 0.0 M44  
OXID SP.GR. 60/60 0.0 N204  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

T/C AT 0-37830 IN2  
T/C AE 15.1360 IN2  
EUEL NOM 0.0 LBS/SEC  
OXID NOM 0.0 LBS/SEC  
FSG NOM 0.0  
DSG NOM 0.0

F/OX VAL S/N /

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	63.2	344.6	355.0
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	61.6	467.5	476.6
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	60.6	862.6	870.8
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	61.0	58.8	61.7
66.			0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	61.0	546.4	802.5
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	61.2	776.1	928.3
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	60.6	896.8	1068.8
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	59.9	786.0	913.6
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	60.8	1175.9	1275.2
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	60.6	190.3	283.2
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	59.4	266.3	398.3
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	60.9	1394.5	1429.5
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	63.0	1587.3	1635.9
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	60.2	1001.6	1015.0
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	60.8	1172.0	1161.0
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	60.7	77.3	79.3
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	55.3	92.7	101.2
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	61.9	100.3	119.1
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	63.0	112.5	124.3
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	59.9	530.5	708.8
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	59.4	531.2	673.9
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	60.6	1619.2	1663.6
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	60.4	1447.6	1497.3

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BELL AEROSPACE TEXTRON

P716 REV.01/08/86 MODEL 891L - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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TESTS 4348 - 4348 CELL A-2 DATE 02/24/86 - 02/24/86 TEST REF. 911-E-001

TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N / T/C AT(AMB) .37830 IN2 FSG NUM (60/60) 0.0  
 INJECTOR S/N / T/C AE(AMB) \*\*\*\*\* IN2 USG NUM (60/60) 0.0  
 F/OX VALVE S/N / OXID NUM .0 LBS/SEC

PERFORMANCE TEST DATA SUMMARY

TEST NO.	DUR	DATA	MEASURED										*****										*****										PSIA	PERC																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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PARAMETER		UNITS		STATIC		1.0		2.0		3.0		4.0		5.0		10.0		15.0	
SYMBOL		TAMB		DEG. FAHR		78.4		139.0		177.1		207.9		233.5		257.1		317.3	
62. CELL AMBIENT TEMPERATURE		TAMB		DEG. FAHR		78.4		139.0		177.1		207.9		233.5		257.1		317.3	
63. FUEL CAVITY TEMP		FCT		DEG. FAHR		73.0		238.7		363.2		422.1		447.5		458.1		454.9	
64. NOZZLE LAND TEMP.		NLT		DEG. FAHR		71.9		573.0		676.0		753.7		791.7		838.2		878.2	
65. SKIN TEMP. NO. 1		SKNT1		DEG. FAHR		72.4		72.5		72.4		72.3		72.0		71.9		71.1	
66. SKIN TEMP. NO. 3		SKNT3		DEG. FAHR		72.0		72.5		72.6		74.7		81.3		93.4		221.4	
67. SKIN TEMP. NO. 4		SKNT4		DEG. FAHR		72.1		100.1		137.2		179.9		227.2		277.9		494.7	
68. SKIN TEMP. NO. 5		SKNT5		DEG. FAHR		71.7		99.9		140.4		192.7		259.4		316.5		578.2	
69. SKIN TEMP. NO. 6		SKNT6		DEG. FAHR		71.1		90.4		117.1		192.6		193.6		245.9		503.6	
70. SKIN TEMP. NO. 7		SKNT7		DEG. FAHR		72.0		95.9		128.2		169.1		219.0		280.1		652.8	
71. SKIN TEMP. NO. 8		SKNT8		DEG. FAHR		72.1		74.7		75.7		77.0		79.0		81.2		106.2	
72. SKIN TEMP. NO. 9		SKNT9		DEG. FAHR		70.9		73.3		74.4		75.8		77.2		79.6		114.4	
73. SKIN TEMP. NO. 10		SKNT10		DEG. FAHR		71.9		153.4		348.4		517.1		665.9		793.7		1179.6	
74. SKIN TEMP. NO. 11		SKNT11		DEG. FAHR		73.9		167.3		383.0		582.6		758.2		910.2		1374.7	
75. SKIN TEMP. NO. 12		SKNT12		DEG. FAHR		71.7		165.6		363.1		520.0		636.5		726.3		931.0	
76. SKIN TEMP. NO. 13		SKNT13		DEG. FAHR		72.0		158.4		365.2		540.7		679.9		790.5		1122.3	
77. SKIN TEMP. NO. 14		SKNT14		DEG. FAHR		71.9		72.5		72.7		73.3		74.4		75.6		82.8	
78. SKIN TEMP. NO. 15		SKNT15		DEG. FAHR		70.5		71.2		71.3		72.2		73.7		75.8		89.8	
79. SKIN TEMP. NO. 16		SKNT16		DEG. FAHR		73.1		74.2		74.2		74.4		74.9		75.6		86.2	
80. SKIN TEMP. NO. 17		SKNT17		DEG. FAHR		77.0		77.3		77.5		78.0		79.7		82.0		99.3	
81. SKIN TEMP. NO. 18		SKNT18		DEG. FAHR		72.0		82.6		107.7		133.1		164.2		195.3		337.0	
82. SKIN TEMP. NO. 19		SKNT19		DEG. FAHR		70.8		82.8		109.4		135.1		165.6		196.2		334.0	
83. SKIN TEMP. NO. 20A		SKNT20A		DEG. FAHR		71.6		150.9		369.8		576.8		761.4		920.7		1410.5	
84. SKIN TEMP. NO. 21A		SKNT21A		DEG. FAHR		71.4		149.0		346.4		529.9		691.7		828.8		1251.9	
85. SKIN TEMP. NO. 21A		SKNT21A		DEG. FAHR		71.4		149.0		346.4		529.9		691.7		828.8		1251.9	

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE 14.42 PSIA				T/C AT 0.37830 IN2				MUJEL NU 8911			
TIME OF RUN 1041 HRS				T/C AE 15.1360 IN2				TEST DATE 02/24/86			
LENGTH OF RUN 27.6 SEC				FUEL NOM 0.0 LBS/SEC				TEST CELL A-2			
FUEL SP.GR. 60/60 0.3 MMH				OXID NOM 0.0 LBS/SEC				TEST NU 4348			
OXID SP.GR. 60/60 0.3 N2O4				FSG NOM 0.0				T/C S/N			
FUEL TRIM 23IFICE				DSG NOM 0.0				INJ S/N			
OXID TRIM ORIFICE								F/OX VAL S/N			
EXTRA PARAMETERS											
PARAMETER											
SYMBOL		UNITS		STATIC		20.0		27.0			
62. CELL AMBIENT TEMPERATURE		JAMB		DEG.FAHR		78.4		361.9		373.3	
63. FUEL CAVITY TEMP		FCI		DEG.FAHR		73.0		481.7		485.5	
64. NOZZLE LAND TEMP.		NLT		DEG.FAHR		71.9		871.9		877.2	
65. SKIN TEMP. NO. 1		SKNT1		DEG.FAHR		72.4		71.3		72.7	
66. SKIN TEMP. NO. 3		SKNT3		DEG.FAHR		72.0		574.2		785.6	
67. SKIN TEMP. NO. 4		SKNT4		DEG.FAHR		72.1		781.5		905.6	
68. SKIN TEMP. NO. 5		SKNT5		DEG.FAHR		71.7		924.6		1066.2	
69. SKIN TEMP. NO. 6		SKNT6		DEG.FAHR		71.1		791.2		893.9	
70. SKIN TEMP. NO. 7		SKNT7		DEG.FAHR		72.0		1134.1		1036.1	
71. SKIN TEMP. NO. 8		SKNT8		DEG.FAHR		72.1		206.2		276.6	
72. SKIN TEMP. NO. 9		SKNT9		DEG.FAHR		70.9		279.9		379.9	
73. SKIN TEMP. NO. 10		SKNT10		DEG.FAHR		71.9		1390.2		1417.6	
74. SKIN TEMP. NO. 11		SKNT11		DEG.FAHR		73.9		1631.3		1668.1	
75. SKIN TEMP. NO. 12		SKNT12		DEG.FAHR		71.7		1002.4		1010.4	
76. SKIN TEMP. NO. 13		SKNT13		DEG.FAHR		72.0		1164.6		1161.3	
77. SKIN TEMP. NO. 14		SKNT14		DEG.FAHR		71.9		87.7		87.7	
78. SKIN TEMP. NO. 15		SKNT15		DEG.FAHR		70.5		106.6		112.4	
79. SKIN TEMP. NO. 16		SKNT16		DEG.FAHR		73.1		113.3		125.5	
80. SKIN TEMP. NO. 17		SKNT17		DEG.FAHR		77.0		121.8		134.1	
81. SKIN TEMP. NO. 18		SKNT18		DEG.FAHR		72.0		566.8		702.1	
82. SKIN TEMP. NO. 19		SKNT19		DEG.FAHR		70.8		539.5		642.1	
83. SKIN TEMP. NO. 20A		SKNT20A		DEG.FAHR		71.6		1675.6		1715.8	
84. SKIN TEMP. NO. 21A		SKNT21A		DEG.FAHR		71.4		1483.2		1520.4	

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P715 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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TESTS 4349 - 4349 CELL A-2 DATE 03/04/86 - 03/04/86 TEST REP. 911-E-001

## TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N	T/C AT(AMB)	37830	IN2	FSG NUM (60/60)	0.0
INJECTOR S/N	T/C AE(AMB)	*****	IN2	USG NUM (60/60)	0.0
F/OX VALVE S/N				FUEL NUM	0.0
				OXID NUM	0.0

## PERFORMANCE TEST DATA SUMMARY

TEST NO.	DUR	MEASURED										*****										DPU CLR	DPT COR	PA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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BELL AEROSPACE TEXTRON

PT16 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE 01

BAROMETRIC PRESSURE	14.36	PSIA	T/C	AT 0.37830	IN2	MODEL NU	8911
TIME OF RUN	1501	HR S	T/C	AE 15.1360	IN2	TEST DATE	03/04/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR.	60/60	0.0	OXID	NOM 0.0	LBS/SEC	TEST NU	4349
OXID SP.GR.	60/60	0.0	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ADJUSTICE			USG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/U/X VAL S/N	/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	IAMB	DEG. FAHR	86.9	144.7	188.3	215.3	237.2	257.9	313.6	341.7
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	79.8	239.7	376.5	439.0	462.7	467.7	442.5	449.3
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	78.7	575.5	707.7	784.4	836.8	862.2	885.3	876.6
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	78.3	78.6	78.5	78.2	78.0	77.8	77.5	77.5
66. SKIN TEMP. NO. 2	SKNT2	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	78.3	78.6	78.8	80.8	87.1	99.0	227.0	404.9
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	78.7	102.8	140.1	186.9	237.4	288.4	505.6	674.6
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	78.4	102.7	143.7	202.3	266.4	326.8	594.9	797.4
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	77.5	93.2	119.8	155.2	198.4	249.9	506.4	688.2
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	78.3	106.3	156.2	209.9	293.2	369.8	811.2	1041.9
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	77.9	79.9	80.5	81.4	82.7	84.4	107.5	153.3
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	77.0	80.8	82.2	83.7	84.9	88.3	121.1	201.9
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	78.7	149.7	342.6	519.6	675.0	804.5	1194.5	1348.4
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	80.4	158.7	378.4	563.2	737.3	890.2	1359.3	1545.7
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	80.9	160.7	359.6	520.9	644.0	736.6	951.0	998.7
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	79.2	151.7	354.6	531.5	679.0	787.5	1041.3	1178.8
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	78.6	79.2	79.2	79.7	80.7	82.0	89.3	93.1
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	73.0	74.7	74.8	75.4	77.0	79.3	93.5	104.4
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	79.8	80.8	80.9	81.0	81.4	82.1	92.2	106.1
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	79.8	80.5	80.7	81.3	82.7	85.2	102.4	117.0
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	77.5	87.2	110.0	134.4	165.0	196.6	341.1	469.4
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	76.6	85.0	107.5	130.6	158.6	187.9	327.5	431.0
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	78.4	146.3	367.6	581.4	775.3	942.6	1457.3	1657.0
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	77.8	152.7	363.8	557.2	726.0	870.1	1313.3	1483.3

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# BELL AEROSPACE TEXTRON

PAGE 0F

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

MODEL NO 8911  
TEST DATE 03/04/86  
TEST CELL A-2  
TEST NO 4349  
T/C S/N  
INJ S/N

T/C AT 0.37830 IN2  
T/C AE 15.1360 IN2  
FUEL NOM 0.0 LBS/SEC  
OXID NOM 0.0 LBS/SEC  
FSG NOM 0.0  
OSG NOM 0.0

BAROMETRIC PRESSURE 14.36 PSTA  
TIME OF RUN 1501 HRS  
LENGTH OF RUN 30.0 SEC  
FUEL SP.GR. 60/60 0.0 M44  
OXID SP.GR. 60/60 0.0 N2O4  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

F/OX VAL S/N

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	JAMB	DEG.FAHR	86.9	361.3	379.9
63. FUEL CAVITY TEMP	FCT	DEG.FAHR	79.8	470.7	492.6
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	78.7	868.3	879.9
65. SKIN TEMP. NO. 1	SKNT1	DEG.FAHR	78.3	78.5	81.1
66. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	0.0	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	78.3	574.9	851.6
68. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	78.7	792.8	944.6
69. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	78.4	945.6	1122.7
70. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	77.5	798.9	922.5
71. SKIN TEMP. NO. 8	SKNT8	DEG.FAHR	78.3	1126.3	1188.2
72. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	77.9	217.2	313.8
73. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	77.0	293.8	431.7
74. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	78.7	1400.9	1429.1
75. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	80.4	1625.5	1673.1
76. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	80.9	1009.5	1016.0
77. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	79.2	1171.6	1167.2
78. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	78.6	94.5	94.1
79. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	73.0	111.0	118.1
80. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	79.8	119.1	136.7
81. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	79.8	124.0	137.9
82. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	77.5	577.1	753.5
83. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	76.6	511.7	622.7
84. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	78.4	1739.8	1789.6
85. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	77.8	1546.4	1591.3

TESTS	4350 - 4352	CELL A-2	DATE 03/06/86 - 03/06/86	TEST REF.	911-E-001
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## TEST HARDWARE AND PROPELLANT NOMINALS

FSG NDM (60/60) 9.0

USG	NUM	(60/60)	0.0

FILE-1	NUM	0	1 MS/SEC
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UICD NUM	LBS/SEC
	0.0

### PERFORMANCE TEST DATA SUMMARY

## MEASUREMENT

TEST DATA \*\*\*QATIQ\*\*\*

NO- PNT PRESS BULG TEST CUG

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30.0	1.0	72.3	0.0	3.003	0.0	.117223	7516.	49.34	0.0	420.9	0.0	1.803	1/9.	225.	74.	66.	0.0	0.0	0.083
	2.0	72.6	0.0	3.003	0.0	.117447	7533.	49.46	0.0	421.1	0.0	1.800	1/9.	226.	72.	65.	0.0	0.0	0.084
	3.0	72.7	0.0	2.995	0.0	.117553	7532.	49.48	0.0	420.9	0.0	1.799	1/9.	226.	72.	63.	0.0	0.0	0.087
	4.0	72.8	0.0	2.989	0.0	.117655	7547.	49.56	0.0	421.2	0.0	1.799	1/9.	226.	71.	60.	0.0	0.0	0.089
	5.0	72.9	0.0	2.983	0.0	.117752	7540.	49.57	0.0	421.0	0.0	1.798	1/9.	226.	71.	58.	0.0	0.0	0.090
	10.0	73.4	0.0	2.961	0.0	.118088	7557.	49.91	0.0	422.6	0.0	1.798	1/9.	226.	70.	51.	0.0	0.0	0.093
	15.0	73.4	0.0	2.954	0.0	.118281	7564.	49.99	0.0	422.6	0.0	1.799	1/9.	226.	69.	47.	0.0	0.0	0.094
	20.0	73.5	0.0	2.953	0.0	.118403	7561.	50.10	0.0	423.2	0.0	1.802	1/9.	226.	67.	48.	0.0	0.0	0.094
	29.4	73.8	0.0	2.967	0.0	.119961	7558.	50.43	0.0	424.2	0.0	1.801	1/9.	226.	63.	46.	0.0	0.0	0.094

BELL AEROSPACE TEXTRON

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P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PARAMETER		SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
BAROMETRIC PRESSURE	14.16 PSIA	T/C	AT 0.37830	IN2							
TIME OF RUN	0928 HRS	T/C	AE 15.1360	IN2							
LENGTH OF RUN	30.0 SEC	FUEL	NOM 0.0	LBS/SEC							
FUEL SP. GR. 60/60	0.0 MMH	OXID	NOM 0.0	LBS/SEC							
OXID SP. GR. 60/60	0.0 N204	FSG	NOM 0.0								
FUEL TRIM ADJUSTICE		NSG	NOM 0.0								
OXID TRIM ORIFICE											
EXTRA PARAMETERS											
62. CELL AMBIENT TEMPERATURE		TAMB	DEG. FAHR		74.3	133.4	178.0	209.6	234.1	258.8	323.1
62A. CELL AMBIENT TEMPERATURE (NEAR T-101)		TAMB1	DEG. FAHR		72.9	87.7	94.6	101.2	106.5	113.2	150.4
62B. CELL AMBIENT TEMPERATURE (NEAR T-21A)		TAMB2	DEG. FAHR		73.0	93.2	100.9	105.2	110.8	117.7	166.3
63. FUEL CAVITY TEMP.		ECI	DEG. FAHR		73.9	228.5	354.3	409.5	426.6	419.9	404.6
64. NOZ/LE LAND TEMP.		NLT	DEG. FAHR		73.0	569.3	696.0	771.4	814.6	837.9	855.9
65. SKIN TEMP. NO. 1		SKNT1	DEG. FAHR		73.8	74.3	74.1	73.6	73.1	72.8	71.2
67. SKIN TEMP. NO. 3		SKNT3	DEG. FAHR		73.1	73.9	74.1	76.2	82.8	95.0	221.4
68. SKIN TEMP. NO. 4		SKNT4	DEG. FAHR		72.9	100.2	137.0	178.6	227.1	278.1	488.9
69. SKIN TEMP. NO. 5		SKNT5	DEG. FAHR		72.5	101.1	142.7	198.1	261.7	322.5	584.3
70. SKIN TEMP. NO. 6		SKNT6	DEG. FAHR		71.9	89.2	115.5	149.7	189.6	238.6	485.8
71. SKIN TEMP. NO. 7		SKNT7	DEG. FAHR		72.8	93.2	120.9	156.3	198.5	252.6	552.7
72. SKIN TEMP. NO. 8		SKNT8	DEG. FAHR		72.1	76.0	76.9	78.0	79.7	81.4	102.3
73. SKIN TEMP. NO. 9		SKNT9	DEG. FAHR		70.7	74.6	75.3	76.4	77.7	79.4	113.7
74. SKIN TEMP. NO. 10		SKNT10	DEG. FAHR		72.8	147.5	334.3	501.4	645.9	767.1	1144.2
75. SKIN TEMP. NO. 11		SKNT11	DEG. FAHR		75.3	164.3	380.2	577.1	752.0	903.8	1357.0
76. SKIN TEMP. NO. 12		SKNT12	DEG. FAHR		74.7	158.8	350.6	502.5	614.8	700.5	902.7
77. SKIN TEMP. NO. 13		SKNT13	DEG. FAHR		73.9	153.7	359.2	531.5	669.6	774.2	1029.2
78. SKIN TEMP. NO. 14		SKNT14	DEG. FAHR		73.0	74.1	74.1	74.5	75.1	76.0	81.6
79. SKIN TEMP. NO. 15		SKNT15	DEG. FAHR		67.2	58.3	68.4	69.1	70.5	72.6	85.4
81. SKIN TEMP. NO. 17		SKNT17	DEG. FAHR		74.4	74.9	75.1	75.8	77.3	79.7	95.1
82. SKIN TEMP. NO. 18		SKNT18	DEG. FAHR		70.7	82.0	109.5	137.9	170.6	202.9	344.9
83. SKIN TEMP. NO. 19		SKNT19	DEG. FAHR		69.7	79.2	102.8	126.2	153.8	180.9	297.6
84. SKIN TEMP. NO. 20A		SKNT20A	DEG. FAHR		73.0	149.0	375.9	591.6	782.1	945.8	1434.7
85. SKIN TEMP. NO. 21A		SKNT21A	DEG. FAHR		72.5	144.4	342.1	521.3	678.9	813.0	1227.8

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BAROMETRIC PRESSURE 14.16 PSIA		T/C AT 0.37830 IN2	MODEL NU 8911
TIME OF RUN 0928 HRS		T/C AE 15.1360 IN2	TEST DATE 03/06/85
LENGTH OF RUN 30.0 SEC		FUEL NOM 0.0 LBS/SEC	TEST CELL A-2
FUEL SP.GR. 60/60 0.0 MM4		OXID NOM 0.0 LBS/SEC	TEST NU 4350
OXID SP.GR. 60/60 0.0 N204		FSG NOM 0.0	T/C S/N
FUEL TRIM BRIFICE		DSG NOM 0.0	INJ S/N
OXID TRIM ORIFICE		F/UX VAL S/N /	
EXTRA PARAMETERS			
PARAMETER	SYMBOL	UNITS	STATIC 20.0 29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	74.3 357.2 384.2
62A. CELL AMBIENT TEMPERATURE (NEAR T-10)	TAMB1	DEG. FAHR	72.9 239.7 310.8
62B. CELL AMBIENT TEMPERATURE (NEAR T-21A)	TAMB2	DEG. FAHR	73.0 292.0 357.0
63. FUEL CAVITY TEMP	ECI	DEG. FAHR	73.9 448.5 463.7
64. NOZLE LAND TEMP.	NLT	DEG. FAHR	73.0 845.5 857.9
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	73.8 70.6 72.6
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	73.1 572.8 844.9
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	72.9 766.3 910.1
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	72.5 930.6 1108.4
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	71.9 769.2 887.1
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	72.8 993.6 1044.4
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	72.1 176.2 282.9
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	70.7 247.9 390.2
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	72.8 1340.2 1369.4
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	75.3 1611.4 1661.4
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	74.7 969.3 973.0
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	73.9 1130.2 1154.6
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	73.0 85.3 85.8
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	67.2 100.8 108.1
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	74.4 119.6 128.7
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	70.7 581.8 758.8
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	69.7 467.2 574.3
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	73.0 1706.7 1751.5
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	72.5 1453.2 1503.9

# RELL AEROSPACE TESTRJV

PAGE 01

ENGINE S/N 1

MODEL 9911

P716 REV.01/08/96

BAROMETRIC PRESSURE	14.16	PSIA	T/C	AT 0.37830	IN2	MODEL NU	8911
TIME OF RUN	1349	HR S	T/C	AF 15.1360	IN2	TEST DATE	03/06/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0	MM4	OXID	NOM 0.0	LBS/SEC	TEST NU	4351
OXID SP.GR. 60/60	0.0	N204	FSG	NOM 0.0		T/C S/N	
EJEL TRIM ORIFICE			OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	79.9	105.3	179.3	213.4	240.9	265.2	322.0	353.7
62A. CELL AMBIENT TEMPERATURE (NEAR T-10)	TAMB1	DEG.FAHR	74.6	82.0	93.1	97.1	103.4	108.3	140.2	190.7
62B. CELL AMBIENT TEMPERATURE (NEAR T-21A)	TAMB2	DEG.FAHR	74.8	93.3	93.7	99.7	105.8	112.9	150.5	202.5
63. FUEL CAVITY TEMP	ECT	DEG.FAHR	77.3	207.7	357.0	417.7	441.8	439.1	424.6	438.6
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	76.3	557.9	682.8	767.3	811.5	832.3	846.5	849.8
65. SKIN TEMP. N3. 1	SKNT1	DEG.FAHR	77.5	78.2	77.9	77.5	77.2	76.8	75.2	74.5
67. SKIN TEMP. N3. 3	SKNT3	DEG.FAHR	78.7	77.2	77.5	79.6	85.7	96.8	211.1	369.3
68. SKIN TEMP. N3. 4	SKNT4	DEG.FAHR	76.1	104.3	140.8	183.7	233.7	286.9	522.1	709.0
69. SKIN TEMP. N3. 5	SKNT5	DEG.FAHR	76.1	103.9	143.2	195.4	255.5	312.5	549.0	724.0
70. SKIN TEMP. N3. 6	SKNT6	DEG.FAHR	75.1	93.5	118.5	153.3	195.5	248.3	525.6	727.9
71. SKIN TEMP. N3. 7	SKNT7	DEG.FAHR	76.2	95.0	122.2	157.0	194.0	250.4	506.8	649.9
72. SKIN TEMP. N3. 9	SKNT9	DEG.FAHR	74.3	78.4	79.3	80.3	81.6	83.1	103.9	149.0
73. SKIN TEMP. N3. 9	SKNT3	DEG.FAHR	74.9	77.6	79.1	79.8	81.3	83.3	113.4	174.3
74. SKIN TEMP. N3. 10	SKNT10	DEG.FAHR	76.1	151.2	359.1	532.5	696.9	837.2	1284.2	1464.3
75. SKIN TEMP. N3. 11	SKNT11	DEG.FAHR	78.4	156.4	358.3	537.2	693.5	822.1	1207.8	1358.5
76. SKIN TEMP. N3. 12	SKNT12	DEG.FAHR	78.1	149.0	359.8	521.3	657.6	761.9	1017.7	1094.0
77. SKIN TEMP. N3. 13	SKNT13	DEG.FAHR	77.0	134.4	337.1	487.4	607.6	699.6	905.5	961.2
78. SKIN TEMP. N3. 14	SKNT14	DEG.FAHR	76.0	76.6	76.8	77.1	77.6	78.8	85.8	89.9
79. SKIN TEMP. N3. 15	SKNT15	DEG.FAHR	70.2	70.7	71.0	72.0	73.2	75.3	98.5	94.7
81. SKIN TEMP. N3. 17	SKNT17	DEG.FAHR	77.3	77.6	78.0	78.7	80.1	82.5	100.4	113.6
82. SKIN TEMP. N3. 18	SKNT18	DEG.FAHR	73.0	83.1	109.7	137.4	170.2	202.3	343.4	464.7
83. SKIN TEMP. N3. 19	SKNT19	DEG.FAHR	72.2	81.7	111.6	142.1	176.8	210.1	350.1	469.7
94. SKIN TEMP. N3. 20A	SKNT20A	DEG.FAHR	76.2	139.3	340.3	532.2	702.8	845.5	1280.4	1440.6
95. SKIN TEMP. N3. 21A	SKNT21A	DEG.FAHR	75.8	153.8	369.5	568.0	744.2	899.5	1379.9	1574.3

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# BELL AEROSPACE TEXTRON

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0716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

BAROMETRIC PRESSURE	14.16	PSIA	T/C	AT 0.37830	IN2	MODEL NO	4911
TIME OF RUN	1349	HRS	T/C	AE 15.1360	IN2	TEST DATE	03/06/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MWH	OXID	NOM 0.0	LBS/SEC	TEST NO	4351
OXID SP. GR. 60/60	0.0	N204	FSG	NOM 0.0		I/C S/N	
FUEL TRIP JOFFICE			DSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	79.9	370.0	381.0
62A. CELL AMBIENT TEMPERATURE (NEAR T-10)	TAMB1	DEG. FAHR	74.6	240.7	308.7
62B. CELL AMBIENT TEMPERATURE (NEAR T-21A)	TAMB2	DEG. FAHR	74.8	247.1	316.0
63. FUEL CAVITY TEMP	ECT	DEG. FAHR	77.3	470.1	480.3
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	76.3	832.0	852.2
65. SKIN TEMP. N1. 1	SKNT1	DEG. FAHR	77.5	74.5	75.8
67. SKIN TEMP. N1. 3	SKNT3	DEG. FAHR	76.7	525.0	759.0
69. SKIN TEMP. N1. 4	SKNT4	DEG. FAHR	76.1	849.6	1019.3
69. SKIN TEMP. N1. 5	SKNT5	DEG. FAHR	76.1	849.2	996.1
70. SKIN TEMP. N1. 6	SKNT6	DEG. FAHR	75.1	862.9	1003.0
71. SKIN TEMP. N1. 7	SKNT7	DEG. FAHR	76.2	806.4	937.6
72. SKIN TEMP. N1. 8	SKNT8	DEG. FAHR	74.3	214.4	314.3
73. SKIN TEMP. N1. 9	SKNT9	DEG. FAHR	74.9	247.2	345.3
74. SKIN TEMP. N1. 10	SKNT10	DEG. FAHR	76.1	1540.6	1591.2
75. SKIN TEMP. N1. 11	SKNT11	DEG. FAHR	78.4	1413.7	1447.3
76. SKIN TEMP. N1. 12	SKNT12	DEG. FAHR	78.1	1118.1	1136.3
77. SKIN TEMP. N1. 13	SKNT13	DEG. FAHR	77.0	979.9	986.6
78. SKIN TEMP. N1. 14	SKNT14	DEG. FAHR	76.0	91.6	92.6
79. SKIN TEMP. N1. 15	SKNT15	DEG. FAHR	70.2	105.0	112.2
81. SKIN TEMP. N1. 17	SKNT17	DEG. FAHR	77.3	124.9	141.2
82. SKIN TEMP. N1. 18	SKNT18	DEG. FAHR	73.0	565.1	728.6
93. SKIN TEMP. N1. 19	SKNT19	DEG. FAHR	72.2	562.0	700.8
94. SKIN TEMP. N1. 20A	SKNT20A	DEG. FAHR	76.2	1507.7	1543.8
95. SKIN TEMP. N1. 21A	SKNT21A	DEG. FAHR	75.8	1549.2	1703.5

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BELL AEROSPACE TEXTRON

P716 PEV.01/09/86 MODEL 9911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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UP

PARAMETER		UNITS		STATIC		1.0		2.0		3.0		4.0		5.0		10.0		15.0	
SYMBOL		DEG. FAHR		T-10		T-21A		T-21A		T-21A		T-21A		T-21A		T-21A		T-21A	
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	85.3	156.8	193.8	215.7	232.0	245.7	283.2	300.3									
62A. CELL AMBIENT TEMPERATURE (NEAR T-10)	TAMB1	DEG. FAHR	262.5	268.8	266.5	265.0	265.2	265.9	283.9	313.9									
62B. CELL AMBIENT TEMPERATURE (NEAR T-21A)	TAMB2	DEG. FAHR	234.6	248.5	249.3	249.9	251.9	255.0	273.5	295.5									
63. FUEL CAVITY TEMP	ECI	DEG. FAHR	321.6	364.5	402.0	410.0	408.2	405.4	392.6	386.9									
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	321.0	385.6	424.3	436.4	437.7	434.1	429.3	415.1									
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	336.1	334.1	325.5	313.8	301.5	289.3	234.4	193.2									
66. SKIN TEMP. NO. 2	SKNT2	DEG. FAHR	408.7	428.1	407.4	409.2	414.7	424.5	512.9	522.8									
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	399.2	415.8	449.7	490.3	534.0	574.2	757.5	903.1									
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	398.3	416.8	454.7	499.3	545.0	585.0	761.7	873.6									
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	390.3	390.1	419.3	453.2	496.8	543.6	758.3	944.5									
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	389.5	390.0	419.8	451.0	490.5	532.5	715.6	931.5									
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	293.5	291.8	287.6	284.0	281.2	279.3	286.3	315.5									
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	310.0	308.7	305.1	301.9	299.8	298.4	312.9	345.0									
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	385.3	471.5	638.6	790.0	917.2	1018.1	1297.3	1387.8									
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	389.4	470.7	625.7	761.1	864.8	953.3	1179.0	1229.8									
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	360.6	446.9	598.4	715.6	797.6	858.1	972.9	987.0									
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	354.0	426.7	557.1	657.0	721.5	763.1	841.3	852.2									
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	292.3	291.6	282.6	268.4	252.7	237.2	175.4	138.5									
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	298.8	290.4	294.9	287.0	277.5	257.4	221.4	186.9									
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	287.7	288.5	288.7	289.0	288.7	288.2	280.3	269.0									
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	392.0	400.1	415.3	432.6	450.7	468.7	554.3	631.5									
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	389.6	395.7	404.6	413.4	421.6	429.5	465.0	496.0									
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	390.9	460.2	615.7	760.2	878.6	972.0	1210.8	1284.5									
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	395.8	475.0	648.7	807.6	941.2	1049.7	1348.9	1442.8									
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR																	
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR																	

EXTRA PARAMETERS

F/U VAL S/N

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BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE 14.16 PSIA  
 TIME OF RUN 1357 HRS  
 LENGTH OF RUN 30.0 SEC  
 FUEL SP. GR. 60/60 0.0 MM-H  
 OXID SP. GR. 60/60 0.0 V204  
 FUEL TRIM DEVICE  
 OXID TRIM ORIFICE

MODEL NO 8911  
 TEST DATE 03/06/86  
 TEST CELL A-2  
 TEST NO 4352  
 T/C S/N  
 INJ S/N  
 F/OX VAL S/N

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	86.3	312.6	326.0
62A. CELL AMBIENT TEMPERATURE (NEAR T-10)	TAMB1	DEG. FAHR	262.5	338.6	375.4
62B. CELL AMBIENT TEMPERATURE (NEAR T-21A)	TAMB2	DEG. FAHR	234.6	316.8	339.8
63. FUEL CAVITY TEMP	ECT	DEG. FAHR	323.6	382.5	383.0
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	321.0	710.2	714.5
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	336.1	167.2	133.9
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	404.7	724.4	866.1
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	399.2	990.4	1100.6
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	394.3	946.8	1030.4
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	390.3	974.9	1061.0
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	389.5	894.0	965.2
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	293.5	349.8	412.4
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	310.0	386.2	438.0
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	385.3	1412.7	1419.1
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	389.4	1249.2	1260.7
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	360.6	984.5	982.5
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	354.0	850.8	852.9
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	292.3	117.9	103.4
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	298.8	163.2	138.2
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	287.7	257.5	239.4
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	392.0	698.0	795.2
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	389.6	522.3	559.1
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	390.9	1302.7	1310.0
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	395.8	1477.5	1500.0

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BELL AEROSPACE TEXTRON

P716 REV.01/09/86

MODEL 8911

- PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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TESTS 4353 - 4355 CELL A-2 DATE 03/11/86 - 03/11/86 TEST REF. 911-E-001

TEST HARDWARE AND PROPELLANT NUMINALS

CHAMBER S/N

INJECTOR S/N

F/OX VALVE S/N

T/C AT(AMB) .37720 IN2

T/C AELAMB) \*\*\*\*\* IN2

FSS NUM (60/60) 0.0

USG NUM (60/60) 0.0

FUEL NUM .0 LBS/SEC

OXID NUM .0 LBS/SEC

PERFORMANCE TEST DATA SUMMARY

MEASURED

TEST NO.	OUR DATA	*****C*****	*****RATIO*****	WTOT	C*	***INF***	**ISP	INF**	CF	UHP	FFP	JFT	FFT	TOTAL	IMPULSE	PSIA	PSIA	DEG.FAHR	L9-SEC	PSID	PSID	PSIA	PA
	PNT PRESS ROUG	TEST	COR	TEST	COR	TEST	COR	TEST	COR	TEST	COR	TEST	COR	TEST	COR	TEST	COR	TEST	COR	TEST	COR	TEST	COR
	SEC	SEC	PSIA	PERC	LB/SEC	FT/S	LB	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC
4353	30.0	1.0	69.5	0.0	4.065	3.0	0.0	385.2	0.0	1.841	203.	190.	65.	70.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2.0	70.0	0.0	4.061	3.0	0.0	389.5	0.0	1.848	203.	190.	64.	68.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3.0	70.5	0.0	4.048	3.0	0.0	392.7	0.0	1.854	203.	190.	63.	66.	66.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4.0	70.3	0.0	4.037	3.0	0.0	394.9	0.0	1.856	203.	191.	63.	64.	64.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	5.0	71.0	0.0	4.027	3.0	0.0	396.3	0.0	1.859	203.	191.	63.	62.	62.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10.0	71.2	0.0	3.983	3.0	0.0	402.3	0.0	1.865	203.	191.	62.	52.	52.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	15.0	72.3	0.0	3.963	3.0	0.0	402.4	0.0	1.860	202.	191.	62.	47.	47.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	20.0	72.5	0.0	3.964	3.0	0.0	401.3	0.0	1.851	202.	191.	61.	47.	47.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	29.4	72.7	0.0	3.965	3.0	0.0	398.3	0.0	1.835	202.	191.	58.	44.	44.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

4354

30.0	1.0	73.7	0.0	3.159	3.0	0.0	412.2	0.0	1.831	190.	225.	68.	59.	59.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2.0	74.1	0.0	3.159	3.0	0.0	415.7	0.0	1.842	190.	226.	65.	58.	58.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3.0	74.3	0.0	3.155	3.0	0.0	417.6	0.0	1.848	190.	226.	64.	56.	56.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4.0	74.5	0.0	3.150	3.0	0.0	419.4	0.0	1.852	190.	226.	64.	55.	55.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	5.0	74.7	0.0	3.144	3.0	0.0	420.5	0.0	1.854	190.	226.	63.	53.	53.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10.0	75.0	0.0	3.128	3.0	0.0	421.8	0.0	1.855	189.	226.	62.	47.	47.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	15.0	75.2	0.0	3.119	3.0	0.0	420.5	0.0	1.848	189.	226.	61.	44.	44.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	20.0	75.3	0.0	3.118	3.0	0.0	418.8	0.0	1.840	189.	226.	60.	43.	43.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	29.4	75.4	0.0	3.122	3.0	0.0	413.8	0.0	1.818	189.	225.	58.	42.	42.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

4355

30.0	1.0	69.6	0.0	5.042	3.0	0.0	381.8	0.0	1.877	217.	162.	67.	53.	53.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	2.0	69.9	0.0	5.051	3.0	0.0	383.9	0.0	1.887	218.	162.	64.	52.	52.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3.0	70.1	0.0	5.043	3.0	0.0	385.9	0.0	1.894	217.	163.	63.	51.	51.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4.0	70.2	0.0	5.046	3.0	0.0	387.4	0.0	1.898	217.	163.	62.	51.	51.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	5.0	70.4	0.0	5.043	3.0	0.0	388.5	0.0	1.901	217.	163.	62.	50.	50.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10.0	70.8	0.0	5.032	3.0	0.0	389.2	0.0	1.898	217.	163.	60.	47.	47.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	15.0	71.0	0.0	5.034	3.0	0.0	387.8	0.0	1.888	217.	163.	59.	47.	47.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	20.0	71.1	0.0	5.031	3.0	0.0	386.0	0.0	1.879	217.	163.	57.	45.	45.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	29.4	71.3	0.0	5.039	3.0	0.0	382.0	0.0	1.857	217.	163.	54.	45.	45.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/42 ENGINE S/N 1

9716 REV.01/08/86

BAROMETRIC PRESSURE	14.30 PSIA	T/C	AT 0.37720 IN2	MODEL NO	8911
TIME OF RUN	0839 HRS	T/C	AE 15.1360 IN2	TEST DATE	03/11/86
LENGTH OF RUN	30.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0 W4	OXID	NOM 0.0 LBS/SEC	TEST NO	4353
OXID SP. GR. 60/60	0.0 N294	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE		DSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE		F/OX	VAL S/N	/	

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	71.2	131.2	177.9	211.6	239.0	264.2	314.5	350.4
63. FUEL CAVITY TEMP	FCI	DEG. FAHR	71.6	124.7	311.3	359.5	386.5	398.5	419.1	424.2
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	70.7	541.7	645.5	718.9	753.2	770.8	814.2	813.1
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	71.9	72.9	72.6	72.1	71.6	71.0	69.4	68.4
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	71.1	71.9	71.9	73.5	74.1	89.7	200.5	353.3
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	70.7	98.7	138.0	196.7	237.9	288.1	492.7	543.6
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	70.3	95.9	133.2	192.9	239.0	294.9	529.1	703.6
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	68.2	71.1	72.4	73.6	75.0	77.1	108.9	168.0
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	71.0	90.4	117.1	150.2	191.3	245.1	563.9	807.3
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	70.0	72.6	73.1	74.1	75.2	76.7	95.1	130.2
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	70.2	87.5	113.8	146.1	185.8	234.2	471.1	634.9
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	70.5	140.1	318.4	481.3	620.4	741.4	1099.8	1226.8
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	73.2	149.9	341.0	514.1	667.9	799.7	1219.6	1385.4
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	70.2	146.6	325.5	469.1	575.0	658.6	840.3	885.3
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	71.4	139.7	318.0	469.5	586.5	680.3	913.7	980.0
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	70.3	71.2	71.2	71.8	72.4	73.2	78.9	82.1
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	69.1	70.4	70.5	71.0	72.3	73.9	85.4	94.8
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	71.6	72.2	72.2	72.6	73.7	75.4	87.4	100.0
92. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	69.3	80.5	107.7	134.9	167.1	199.3	346.0	480.8
93. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	68.0	76.8	95.8	117.0	140.0	165.3	283.2	390.4
94. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	70.7	130.3	314.2	490.8	645.9	781.1	1205.6	1372.3
95. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	70.3	133.6	315.2	487.7	639.2	771.1	1177.3	1327.1

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# BELL AEROSPACE TEXTRON

PT16 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N J PAGE 06

BAROMETRIC PRESSURE 14.30 PSIA  
 TIME OF RUN 0838 HRS  
 LENGTH OF RUN 30.0 SEC  
 FUEL SP. GR. 60/60 0.0 MMH  
 OXID SP. GR. 60/60 0.0 N2O4  
 FUEL TRIM DRIFTCF  
 OXID TRIM DRIFTCF

MODEL NU 8911  
 TEST DATE 03/11/86  
 TEST CELL A-2  
 TEST NU 4353  
 I/C S/N  
 INJ S/N  
 F/UX VAL S/N /

## AVERAGE AND COMPUTED DATA

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
1. TOTAL FUEL FLOW	TWF	LBS/SEC		.025399	.025460
2. TOTAL OXID FLOW	TWO	LBS/SEC		.100677	.100942
3. TOTAL FLOW	TWT	LBS/SEC		.126076	.126402
4. MIXTURE RATIO	R			3.9638	3.9647
5. TOTAL FUEL FLOW (SI UNITS)	TWF	G/SEC		11.5209	11.5488
6. TOTAL OXID FLOW (SI UNITS)	TWO	G/SEC		45.6670	45.7972
7. TOTAL FLOW (SI UNITS)	TWT	G/SEC		57.1979	57.3360
8. FUEL VENTURI INLET TEMP. (SI UNITS)	FVIT	DEG. FAHR	66.1	46.3	44.2
9. OXID VENTURI INLET TEMP. (SI UNITS)	OVIT	DEG. FAHR	64.6	63.1	60.2
10. FUEL VENTURI INLET TEMP. (SI UNITS)	FVIT	DEG. K	292.1	281.1	279.9
11. OXID VENTURI INLET TEMP. (SI UNITS)	OVIT	DEG. K	291.3	290.5	284.8
12. CHAMBER PRESSURE AVERAGE	PCA	PSIA		72.5	72.7
13. MAX. CHAMBER PRESS. AT POINT	MAXPC	PSIA		0.0	0.0
14. MIN. CHAMBER PRESS. AT POINT	MINPC	PSIA		0.0	0.0
15. RELATIVE PC ROUGHNESS AT POINT	PCR	PERCENT		0.0	0.0
16. THRUST AREA CORRECTED	ATC	IN2		0.3772	0.3772
17. CHARACTERISTIC EXHAUST VELOCITY	C*	FT/SEC		6981.	6990.
20. THRUST A BRIDGE	FA	LBS	-0.635	49.663	49.382
21. THRUST B BRIDGE	FB	LBS	-0.615	48.691	48.443
22. THRUST AVG.	FAVG	LBS		49.177	48.913
23. THRUST AVG. (SI UNITS)	FAVG	N		218.748	217.573
24. SPECIFIC IMPULSE	ISP	SEC		390.1	387.0
25. THRUST COEFFICIENT	CF			1.799	1.782
26. NOZZLE EXIT A/R. PRESS.	NEAP	PSIA	0.0407	0.0939	0.0949
27. THRUST AVG. AT INFINITY	F INF	LBS		50.599	50.349
28. THRUST AVG. AT INFINITY (SI UNITS)	F INF	N		225.773	223.963
29. SPECIFIC IMPULSE AT INFINITY	ISP INF	SEC		401.3	398.3
30. THRUST COEFFICIENT AT INFINITY	CF INF			1.951	1.835
31.				0.0	0.0
32.				0.0	0.0
33.				0.0	0.0
34.				0.0	0.0

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# BELL AEROSPACE IEXTRON

MODEL 891L - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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P716 REV.01/08/86

BAROMETRIC PRESSURE	14.30	PSIA	T/C	AT 0.37720	IN2	MODEL NU	8911
TIME OF RUN	0846	HRS	T/C	AE 15.1360	IN2	TEST DATE	03/11/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NU	4354
OXID SP. GR. 60/60	0.0	N204	FSS	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/UX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYM90L	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	78.5	148.6	188.8	216.5	234.1	251.7	293.6	315.8
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	295.8	329.2	356.0	363.3	363.0	362.2	354.8	349.4
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	293.6	665.6	695.0	712.8	720.0	723.8	716.2	709.0
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	318.7	317.7	309.0	296.9	284.2	271.6	215.5	174.7
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	402.4	401.7	400.6	402.0	407.4	417.3	512.4	632.3
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	388.4	404.8	439.5	479.5	520.8	559.3	728.4	841.5
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	393.5	408.5	443.3	486.5	533.5	577.3	771.3	903.1
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	306.9	304.2	299.3	295.0	291.7	289.4	301.9	336.6
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	381.6	395.1	415.8	458.3	518.6	576.0	821.4	933.0
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	279.3	276.7	272.1	268.1	264.8	262.2	263.4	245.5
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	373.4	382.1	403.0	432.2	469.6	510.8	694.3	806.2
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	373.7	440.7	583.8	714.0	815.9	902.0	1125.6	1195.9
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	384.9	457.2	618.8	765.6	889.9	988.5	1265.4	1355.9
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	379.9	400.9	525.8	615.6	680.8	725.1	806.1	824.8
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	341.4	404.8	538.4	646.2	723.3	776.4	891.9	912.5
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	262.0	262.0	254.1	241.1	226.7	212.3	156.2	124.7
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	276.3	277.0	273.3	266.1	257.2	248.2	206.6	175.6
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	257.0	257.7	258.1	258.3	258.2	257.5	251.3	241.7
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	443.6	450.1	467.5	487.2	507.4	527.4	622.9	707.6
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	408.1	413.4	420.8	429.1	437.3	445.1	479.5	507.3
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	380.8	442.3	597.8	748.3	875.0	977.8	1261.8	1351.7
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	381.7	444.4	591.1	729.2	843.1	937.9	1195.0	1281.4

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BAROMETRIC PRESSURE	14.30	PSIA	I/C	AT 0.37720	IN2	MODEL NU	8911
TIME OF RUN	0846	HR S	I/C	AE 15.1360	IN2	TEST DATE	03/11/86
LENGTH OF RUN	30.0	SEC	FUFL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	444H	OXID	NOM 0.0	LBS/SEC	TEST NU	4354
OXID SP. GR. 60/60	0.0	N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/DX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	78.5	329.5	342.0
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	295.8	346.6	345.1
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	293.6	708.4	705.1
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	318.7	147.0	119.7
66. SKIN TEMP. NO. 2			0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	402.4	741.7	896.6
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	388.4	914.5	992.6
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	393.5	985.4	1085.2
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	306.9	380.2	438.7
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	381.6	952.2	1027.1
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	279.3	313.8	355.0
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	373.4	878.3	944.9
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	373.7	1211.8	1217.9
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	384.9	1380.9	1391.6
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	339.9	823.3	819.4
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	341.4	912.5	909.3
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	262.0	110.7	94.9
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	276.3	153.9	132.4
80. SKIN TEMP. NO. 16			0.0	0.0	0.0
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	257.0	231.9	216.3
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	443.6	777.3	894.3
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	408.1	530.4	559.1
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	380.8	1380.1	1391.7
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	381.7	1307.2	1318.9

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BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

BAROMETRIC PRESSURE	14.30	PSIA	T/C	AT 0.37720	IN2	MODEL NU	8911
TIME OF RUN	0849	HR	T/C	AE 15.1360	IN2	TEST DATE	03/11/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NU	4355
OXID SP. GR. 60/60	0.0	N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			DSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE			F/UX	VAL S/N	/		

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	93.1	139.6	189.2	228.4	260.5	281.1	367.4	401.6
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	327.5	392.6	469.4	503.6	516.5	519.2	521.2	520.2
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	324.3	816.3	891.8	943.0	970.5	982.5	1000.8	1000.1
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	421.5	419.6	406.1	385.3	364.8	346.1	270.3	211.3
66. SKIN TEMP. NO. 2	SKNT2	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	652.3	650.0	648.6	648.7	652.1	658.8	728.9	822.0
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	615.2	621.4	639.4	663.9	692.2	722.2	862.9	971.4
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	633.0	638.9	658.0	686.3	719.3	753.2	911.7	1030.9
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	484.8	476.6	466.8	457.7	449.6	442.9	433.9	428.7
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	613.7	616.8	628.3	650.0	701.3	762.0	999.1	1152.9
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	436.7	429.0	420.5	412.6	405.6	399.0	383.1	393.8
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	589.4	591.3	601.3	624.8	652.4	684.4	846.9	964.2
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	594.9	660.2	789.9	912.4	1015.2	1105.2	1373.0	1477.9
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	615.6	683.9	827.3	962.7	1080.4	1174.9	1498.5	1630.6
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	486.4	553.0	685.6	787.6	868.3	927.2	1069.4	1106.2
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	496.7	557.8	696.0	812.7	906.3	975.7	1159.5	1212.1
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	264.3	265.2	259.6	249.6	237.9	225.9	178.2	149.7
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	293.4	294.6	292.0	286.2	279.0	271.4	238.5	215.6
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	264.2	265.5	265.6	265.7	265.7	265.9	266.2	266.0
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	668.1	674.6	692.3	711.7	731.2	750.9	845.8	931.6
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	546.1	552.2	565.5	581.6	597.8	617.4	695.6	764.3
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	618.7	672.0	801.2	924.4	1041.6	1140.1	1439.1	1579.2
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	621.5	677.2	808.3	936.6	1048.7	1148.0	1449.4	1578.7

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BELL AEROSPACE TEXTRON

PAGE 0F

P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N J

BAROMETRIC PRESSURE 14.30 PSIA  
TIME OF RUN 0949 HRS  
LENGTH OF RUN 30.0 SEC  
FUEL SP.GR. 60/60 0.3 MM  
OXID SP.GR. 60/60 0.3 MM  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

T/C AT 0.37720 IN2  
T/C AE 15.1360 IN2  
FUEL NOM 0.0 LBS/SEC  
OXID NUM 0.0 LBS/SEC  
FSG NOM 0.0  
DSG NOM 0.0

MODEL NU 8911  
TEST DATE 03/11/86  
TEST CELL A-2  
TEST NU 4355  
T/C S/N  
INJ S/N  
F/OX VAL S/N

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	93.1	424.8	441.5
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	327.5	520.0	522.1
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	324.3	997.3	1000.1
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	421.5	171.8	130.4
66. SKIN TEMP. NO. 2	SKNT2	DEG. FAHR	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	652.3	916.1	1055.7
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	615.2	1048.8	1142.8
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	633.0	1120.1	1219.8
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	484.8	495.0	554.9
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	613.7	1178.7	1195.1
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	436.7	416.2	459.9
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	589.4	1037.6	1118.8
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	594.9	1517.9	1545.3
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	615.6	1683.5	1713.5
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	486.4	1117.1	1127.1
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	496.7	1227.7	1237.4
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	264.3	134.4	120.4
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	293.4	200.0	183.3
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	0.0	0.0	0.0
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	264.2	265.1	263.0
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	668.1	1009.0	1134.5
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	546.1	821.5	914.0
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	618.7	1622.4	1647.7
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	621.5	1626.5	1654.9

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# RELL AEROSPACE TEXTURUM

P716 REV.01/08/86 MODEL 891L - PRELIMINARY TEST REPORT - 02/82 ENGINE S/N 1

PAGE 10

BAROMETRIC PRESSURE	14.37	PSIA	I/C	AT 0.37720	IN2	MUDEL NU	8911
TIME OF RUN	0853	HRS	I/C	AE 15.1360	IN2	TEST DATE	03/13/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NU	4356
OXID SP. GR. 60/60	0.0	N204	ESG	NOM 0.0		I/C S/N	
FUEL TRIM ORIFICE			DSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE			F/OX	VAL S/N	/		

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	76.5	143.4	192.5	225.3	250.3	271.1	326.9	356.3
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	76.2	210.1	325.6	376.0	402.4	411.1	391.4	419.4
64. NOZZLE LAID TEMP.	NLT	DEG. FAHR	75.3	588.5	698.3	757.3	801.7	829.9	851.5	850.3
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	76.4	76.8	76.5	76.1	75.5	75.1	73.4	72.7
66.			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	75.7	59.3	63.1	75.7	87.2	105.4	274.2	466.6
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	75.2	104.4	145.7	197.3	251.3	303.0	522.6	685.3
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	74.4	102.2	141.7	196.3	255.9	313.6	562.7	747.8
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	74.2	93.8	120.3	154.6	194.3	240.3	498.1	674.8
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	75.4	97.9	125.5	161.9	202.4	252.5	538.7	735.4
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	74.2	80.2	80.7	81.5	82.9	84.5	103.7	141.4
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	73.0	76.6	77.4	78.5	79.9	82.0	114.1	178.2
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	75.1	151.7	335.3	503.7	649.8	772.9	1142.6	1280.2
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	77.9	167.9	373.3	560.5	725.5	868.4	1300.3	1466.8
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	74.8	139.9	305.8	472.2	601.8	688.2	877.9	926.3
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	76.3	158.0	349.8	513.9	640.2	739.7	975.3	1083.7
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	75.1	76.1	76.1	76.5	77.2	77.9	83.3	86.0
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	73.7	74.7	74.8	75.3	76.7	78.5	90.6	99.9
80.			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	83.1	83.9	84.1	84.5	85.8	87.7	100.1	112.1
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	72.9	85.4	111.1	136.9	167.8	199.2	347.6	498.3
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	71.9	83.4	106.9	133.6	164.4	194.3	313.9	415.9
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	75.3	142.3	333.2	517.5	682.0	822.6	1255.2	1421.1
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	74.8	141.4	323.3	460.3	623.9	776.4	1168.3	1348.7

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BELL AEROSPACE TEXTRON

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PT16 REV.01/08/86 MODEL 9911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

BAROMETRIC PRESSURE	14.37 PSIA	T/C	AT 0.37720 IN2	MODEL NU	8911
TIME OF RUN	0853 HRS	T/C	AE 15.1360 IN2	TEST DATE	03/13/86
LENGTH OF RUN	30.0 SEC	FUEL NOM	0.0 LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0 MMH	OXID NOM	0.0 LBS/SEC	TEST NU	4356
OXID SP. GR. 60/60	0.0 N204	FSG NOM	0.0	T/C S/N	
FUEL TRIM ORIFICE		OSG NOM	0.0	INJ S/N	
OXID TRIM ORIFICE				F/OX VAL S/N	/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	76.5	365.8	386.0
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	76.2	426.8	431.9
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	75.3	854.7	856.3
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	76.4	72.8	74.7
66. SKIN TEMP. NO. 2	SKNT2	DEG. FAHR	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	75.7	635.3	862.3
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	75.2	799.5	946.6
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	74.4	877.2	1035.0
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	74.2	781.8	904.3
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	75.4	864.0	993.6
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	74.2	193.5	276.0
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	73.0	253.3	353.1
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	75.1	1334.3	1369.3
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	77.9	1532.4	1572.3
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	74.8	939.9	952.5
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	76.3	1099.4	1079.4
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	75.1	86.8	86.7
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	73.7	106.1	112.9
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	0.0	0.0	0.0
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	83.1	118.9	133.5
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	72.9	608.8	809.7
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	71.9	504.7	634.0
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	75.3	1492.0	1527.8
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	74.8	1411.1	1448.9

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TEST REF. 911-E-001

## TEST HARDWARE AND PROPELLANT NUMINALS

FSG NUM (60/60) 0.0

11561 1607691 0.0

FUEL NUM	LBS/SEC
0.0	

0.0 MIN  
0.0 MIN

LBS/SEC

## PERFORMANCE TEST DATA SUMMARY

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BELL AEROSPACE TEXTRON

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P716 REV.01/08/86 MODEL 89L - PRELIMINARY TEST REPORT - D2/H2 ENGINE S/N 1

BAROMETRIC PRESSURE	14.51	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911			
TIME OF RUN	1010	HRS	T/C	AE 15.1360	IN2	TEST DATE	03/11/86			
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2			
FUEL SP. GR.	60/60	M44	OXID	NOM 0.0	LBS/SEC	TEST NO	4357			
OXID SP. GR.	60/60	N204	FSG	NOM 0.0		T/C S/N				
FUEL TRIM ORIFICE			OSG	NOM 0.0		INJ S/N	/			
OXID TRIM ORIFICE			F/OX	VAL S/N						
EXTRA PARAMETERS										
PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	79.1	125.4	181.6	215.7	240.4	264.3	328.4	357.8
63. FUEL CAVITY TEMP	FCV	DEG. FAHR	69.8	193.2	315.9	370.7	395.1	407.5	405.4	424.7
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	70.1	557.4	668.3	749.3	789.1	810.4	844.8	847.2
65. SKIN TEMP. NJ. 1	SKNT1	DEG. FAHR	72.4	72.6	72.9	72.1	71.6	71.3	70.5	70.8
66. SKIN TEMP. NJ. 3	SKNT3	DEG. FAHR	70.9	71.4	71.7	73.6	79.2	89.4	202.5	368.5
67. SKIN TEMP. NJ. 4	SKNT4	DEG. FAHR	71.3	101.0	145.5	190.0	244.4	296.4	519.8	686.3
68. SKIN TEMP. NJ. 5	SKNT5	DEG. FAHR	71.1	90.8	131.5	177.6	234.5	293.2	547.2	735.5
69. SKIN TEMP. NJ. 6	SKNT6	DEG. FAHR	69.8	88.7	119.2	151.3	186.6	235.2	491.1	669.3
70. SKIN TEMP. NJ. 7	SKNT7	DEG. FAHR	71.9	88.2	119.6	151.5	185.9	236.5	522.4	725.4
71. SKIN TEMP. NJ. 8	SKNT8	DEG. FAHR	69.3	76.3	77.1	78.5	79.9	81.1	99.6	141.1
72. SKIN TEMP. NJ. 9	SKNT9	DEG. FAHR	70.1	74.4	76.5	77.1	80.0	82.0	111.4	171.6
73. SKIN TEMP. NJ. 10	SKNT10	DEG. FAHR	69.9	122.4	297.4	470.5	621.1	749.5	1136.4	1286.4
74. SKIN TEMP. NJ. 11	SKNT11	DEG. FAHR	70.6	131.4	328.5	518.1	685.6	830.7	1278.5	1458.1
75. SKIN TEMP. NJ. 12	SKNT12	DEG. FAHR	70.6	146.9	329.4	479.0	591.6	676.9	875.3	930.9
76. SKIN TEMP. NJ. 13	SKNT13	DEG. FAHR	70.3	125.5	309.9	475.5	606.3	706.8	955.9	1030.2
77. SKIN TEMP. NJ. 14	SKNT14	DEG. FAHR	72.2	73.3	73.0	73.3	74.9	75.6	83.6	88.3
78. SKIN TEMP. NJ. 15	SKNT15	DEG. FAHR	70.7	71.5	71.3	72.3	74.0	76.1	88.8	101.2
79. SKIN TEMP. NJ. 17	SKNT17	DEG. FAHR	71.1	71.3	72.6	71.5	73.9	75.6	91.0	105.3
80. SKIN TEMP. NJ. 18	SKNT18	DEG. FAHR	71.8	79.8	106.7	137.7	166.3	198.1	351.4	484.6
81. SKIN TEMP. NJ. 19	SKNT19	DEG. FAHR	71.0	78.7	103.3	135.6	165.8	198.3	338.2	446.9
82. SKIN TEMP. NJ. 20A	SKNT20A	DEG. FAHR	70.9	113.7	294.1	483.8	652.0	799.0	1258.4	1437.5
83. SKIN TEMP. NJ. 21A	SKNT21A	DEG. FAHR	71.1	115.9	225.8	372.2	502.3	620.0	973.2	1143.2

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P716 REV.01/08/86 MODEL 891 - PRELIMINARY TEST REPORT - Q2/H2 ENGINE S/N 1

BAROMETRIC PRESSURE	14.51	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	10.0	SEC	I/C	AE 15.1360	IN2	TEST DATE	03/11/86
LENGTH OF RUN	30.0	SEC	FUEL NOM	0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	M44	OXID NOM	0.0	LBS/SEC	TEST NO	4357
OXID SP. GR. 60/60	0.0	M204	FSG NOM	0.0		T/C S/N	
FUEL TR14 ORIFICE			OSG NOM	0.0		INJ S/N	
OXID TR14 ORIFICE						F/OX VAL S/N	

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	79.1	374.2	390.2
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	69.8	431.2	433.9
64. NOZ/LE LAVD TEMP.	NLT	DEG. FAHR	70.1	846.9	848.6
65. SKIN TEMP. NJ. 1	SKNT1	DEG. FAHR	72.4	71.1	74.7
66.			0.0	0.0	0.0
67. SKIN TEMP. NJ. 3	SKNT3	DEG. FAHR	70.9	531.3	786.2
68. SKIN TEMP. NJ. 4	SKNT4	DEG. FAHR	71.3	807.6	955.5
69. SKIN TEMP. NJ. 5	SKNT5	DEG. FAHR	71.1	871.9	1037.8
70. SKIN TEMP. NJ. 6	SKNT6	DEG. FAHR	69.8	785.7	908.9
71. SKIN TEMP. NJ. 7	SKNT7	DEG. FAHR	71.9	858.2	999.8
72. SKIN TEMP. NJ. 9	SKNT9	DEG. FAHR	69.3	187.5	276.1
73. SKIN TEMP. NJ. 9	SKNT9	DEG. FAHR	70.1	248.4	363.0
74. SKIN TEMP. NJ. 10	SKNT10	DEG. FAHR	69.9	1345.8	1381.7
75. SKIN TEMP. NJ. 11	SKNT11	DEG. FAHR	70.6	1528.4	1574.0
76. SKIN TEMP. NJ. 12	SKNT12	DEG. FAHR	70.6	949.1	960.9
77. SKIN TEMP. NJ. 13	SKNT13	DEG. FAHR	70.3	1054.1	1072.4
78. SKIN TEMP. NJ. 14	SKNT14	DEG. FAHR	72.2	90.7	93.3
79. SKIN TEMP. NJ. 15	SKNT15	DEG. FAHR	70.7	109.3	118.4
80.			0.0	0.0	0.0
81. SKIN TEMP. NJ. 17	SKNT17	DEG. FAHR	71.1	117.2	133.7
82. SKIN TEMP. NJ. 19	SKNT19	DEG. FAHR	71.8	600.8	788.5
83. SKIN TEMP. NJ. 19	SKNT19	DEG. FAHR	71.0	538.5	672.4
84. SKIN TEMP. NJ. 20A	SKNT20A	DEG. FAHR	70.9	1507.5	1548.0
85. SKIN TEMP. NJ. 21A	SKNT21A	DEG. FAHR	71.1	1224.2	1274.4

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# BELL AEROSPACE TEXTRON

MODEL 891 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE 01

PT16 REV.01/08/86

TESTS 4358 - 4358 CELL A-2 DATE 03/17/86 - 03/17/86 TEST REF. 911-E-001

TEST HARDWARE AND PROPELLANT NOMINALS

FSG NUM (60/60) 0.0  
 OSC NUM (60/60) 0.0  
 FUEL NUM 0.0  
 OXID NUM 0.0

CHARGE S/N  
 INJECTOR S/N  
 F/OX-VALVE S/N

## PERFORMANCE TEST DATA SUMMARY

### MEASURED

TEST NO.	DUR SEC	DATA PNT	SEC	PSIA	PERC	WTOT LB/SEC	C* LB/SEC	***F INF***	**ISP INF**	CF	UPP	F+P UFT	F+T	TOTAL IMPULSE	DPU GUR	DPT GUR	PSIA	PSIA
4358	109.8	1.0	72.1	0.0	4.103	0.0	129190	6781.0	49.93	0.0	378.5	0.0	1.797	211.195	73.78	0.0	0.0	0.0
		2.0	73.0	0.0	4.104	0.0	129309	6955.0	49.61	0.0	383.7	0.0	1.802	211.196	74.80	0.0	0.0	0.0
		3.0	73.4	0.0	4.104	0.0	129409	6891.0	50.05	0.0	386.7	0.0	1.807	211.196	73.79	0.0	0.0	0.0
		4.0	73.6	0.0	4.101	0.0	129424	6908.0	50.19	0.0	387.8	0.0	1.808	211.196	73.79	0.0	0.0	0.0
		5.0	73.8	0.0	4.095	0.0	129445	6926.0	50.32	0.0	388.7	0.0	1.807	211.197	73.77	0.0	0.0	0.0
		10.0	74.5	0.0	4.063	0.0	129550	6981.0	50.78	0.0	392.0	0.0	1.808	211.197	74.71	0.0	0.0	0.0
		15.0	74.7	0.0	4.039	0.0	129667	7002.0	51.18	0.0	394.7	0.0	1.815	211.197	74.66	0.0	0.0	0.0
		20.0	75.1	0.0	4.023	0.0	129763	7018.0	51.53	0.0	397.1	0.0	1.822	211.197	74.62	0.0	0.0	0.0
		29.4	75.2	0.0	4.016	0.0	129957	7025.0	51.92	0.0	399.5	0.0	1.831	210.196	72.59	0.0	0.0	0.0
		60.0	75.6	0.0	4.028	0.0	130509	7036.0	52.27	0.0	400.5	0.0	1.833	210.196	65.58	0.0	0.0	0.0
		90.0	75.7	0.0	4.022	0.0	130634	7039.0	51.82	0.0	396.7	0.0	1.815	209.196	63.56	0.0	0.0	0.0
		109.2	75.9	0.0	4.015	0.0	130673	7054.0	51.50	0.0	394.1	0.0	1.799	209.196	63.54	0.0	0.0	0.0

ORIGINAL TESTS  
 OF POOR QUALITY

# BELL AEROSPACE TETRION

P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE 04

BAROMETRIC PRESSURE	14.51	PSIA	T/C	AT 0.3720	IN2	MODEL NO	8911
TIME OF RUN	1019	HRS	T/C	AE 15.1360	IN2	TEST DATE	03/17/86
LENGTH OF RUN	109.8	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60	MM4	OXID	NOM 0.0	LBS/SEC	TEST NO	4358
OXID SP. GR.	60/60	N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM CRIFICE	0.0		OSG	NOM 0.0		INJ S/N	
OXID TRIM CRIFICE	0.0					F/DX VAL S/N	

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	80.8	128.9	181.7	215.4	241.6	266.2	333.0	359.6
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	111.0	228.2	333.1	386.0	412.5	424.5	440.1	447.1
64. NOZLE LAND TEMP.	NLT	DEG. FAHR	111.2	588.4	684.7	756.6	800.9	822.1	855.5	856.9
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	102.2	102.1	100.4	98.4	97.4	95.4	88.9	85.0
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	102.8	103.4	103.0	105.0	111.4	121.9	236.9	401.1
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	101.5	128.7	168.6	218.0	271.7	322.9	546.7	713.8
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	101.0	120.7	159.3	209.4	267.9	324.9	575.5	760.7
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	98.9	114.8	141.1	170.6	213.7	268.2	519.7	698.1
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	100.2	116.2	142.4	171.5	216.5	273.6	550.4	750.8
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	90.8	93.2	93.4	93.6	94.7	96.5	115.5	153.8
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	98.0	91.2	95.3	96.7	98.0	100.1	130.9	192.0
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	104.5	162.9	340.7	511.3	662.5	788.5	1147.6	1312.4
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	105.6	173.9	372.6	559.3	723.9	866.4	1303.5	1476.2
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	109.1	193.6	370.8	515.5	629.9	711.9	901.5	952.5
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	110.2	170.5	355.3	518.2	647.6	743.1	1011.8	1046.7
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	110.4	110.9	110.1	108.6	107.0	106.5	103.3	104.7
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	109.9	111.2	110.7	110.1	110.4	110.6	115.3	122.0
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	108.2	108.6	109.0	108.9	110.2	111.9	123.2	134.2
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	93.3	105.1	134.6	162.8	194.3	228.6	381.4	515.2
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	93.9	104.3	132.5	162.5	194.8	228.3	362.4	448.2
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	103.7	153.3	336.5	523.1	691.1	835.0	1279.4	1456.1
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	105.6	152.8	297.9	491.0	635.7	763.4	1089.6	1236.4

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BELL AEROSPACE TEXTRON

PAGE 01

ENGINE S/N 1

MODEL 8911

P716 REV.01/08/86

BAROMETRIC PRESSURE 14.51 PSIA  
TIME OF RUN 1719 HRS  
LENGTH OF RUN 109.8 SEC  
FUEL SP. GR. 60/60 0.0 M44  
OXID SP. GR. 60/60 0.0 N204  
FUEL TRIM DRIFICE  
OXID TRIM DRIFICE

MODEL NU 8911

TEST DATE 03/11/86

TEST CELL A-2

TEST NU 4358

1/C S/N

INJ S/N

F/OX VAL S/N

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4	60.0	90.0	109.2
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	80.8	371.1	380.0	402.9	403.0	395.2
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	111.0	445.7	449.2	455.8	455.4	454.7
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	111.2	856.9	857.1	862.7	862.0	857.9
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	102.2	84.2	84.4	95.5	109.1	113.7
66.			0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	102.8	562.0	804.8	1158.6	1264.8	1292.7
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	101.5	833.8	977.9	1173.7	1241.3	1265.5
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	101.0	894.8	1057.3	1271.2	1345.4	1370.3
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	98.9	811.1	931.4	1086.6	1152.3	1179.7
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	100.2	881.7	1015.0	1184.6	1257.9	1287.2
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	90.8	203.7	289.8	416.1	460.3	491.3
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	98.0	270.3	383.6	541.7	618.6	644.7
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	104.5	1368.7	1405.0	1429.3	1430.3	1433.6
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	105.6	1547.4	1588.0	1610.9	1613.9	1613.3
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	109.1	968.0	981.4	996.1	997.5	998.9
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	110.2	1071.7	1085.9	1096.2	1097.7	1097.5
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	110.4	103.4	102.5	102.3	102.5	102.3
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	109.9	126.2	130.5	139.0	143.4	145.6
80.			0.0	0.0	0.0	0.0	0.0	0.0
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	108.2	144.4	154.2	173.5	185.5	190.9
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	93.3	634.0	817.0	1156.6	1284.1	1315.1
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	93.9	556.6	682.7	887.3	955.0	970.6
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	103.7	1525.5	1564.0	1585.8	1584.7	1587.0
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	105.6	1308.8	1330.5	1339.9	1347.1	1347.1

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OF POOR QUALITY

TESTS 4359 - 4359 CELL A-2 DATE 03/18/86 - 03/18/86 TEST REP. 911-E-001

## TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N  
INJECTOR S/NT/C AT (AMB) -37720 IN2  
I/C AE (AMB) \*\*\*\*\* IN2FSG NOM (60/60) 0.0  
OSG NOM (60/60) 0.0  
FUEL NOM .0 LBS/SEC  
OXID NOM .0 LBS/SEC

## PERFORMANCE TEST DATA SUMMARY

## MEASURED

TEST NO.	DUR	MEASURED			***RATIO***			C*			***F INF***			**ISP INF**			CF			DFP			FFP OFI			FFI			IOIAL			IMPULSE			LB-SEC			PSID			CCR			DPO			DPF			COR			PSID			PSIA			PSIA			PA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
		PNT	PRESS	ROUG	TEST	COR	WIDT	FT/S	TEST	LBS	COR	TEST	SEC	SEC	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR	PSIA	DEG-FAHR

ORIGINAL PAGE IS  
OF POOR QUALITY

BELL AEROSPACE TEXTRON

PAGE 01

PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

MODEL 8911

P716 REV.01/08/86

MODEL NO 8911  
TEST DATE 03/18/86  
TEST CELL A-2  
TEST NO 4359  
T/C S/N  
INJ S/N  
F/OX VAL S/N

T/C AT 0.37720 IN2  
T/C AE 15.1360 IN2  
FUEL NOM 0.0 LBS/SEC  
OXID NOM 0.0 LBS/SEC  
FSG NOM 0.0  
OSG NOM 0.0

BAROMETRIC PRESSURE 14.41 PSIA  
TIME OF RUN 1525 HRS  
LENGTH OF RUN 1000.0 SEC  
FUEL SP.GR. 60/60 0.0 MMH  
OXID SP.GR. 60/60 0.0 N204  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	77.7	129.3	166.4	193.6	218.6	233.2	294.1	312.4
63. FUEL CAVITY TEMP	FCT	DEG.FAHR	73.9	198.8	314.8	371.2	399.0	415.6	435.4	444.7
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	73.8	555.6	655.6	732.0	777.3	808.8	842.1	841.4
65. SKIN TEMP. NO. 1	SKNT1	DEG.FAHR	75.5	75.3	75.1	73.9	73.7	73.0	72.0	71.7
66. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	76.4	77.4	77.2	79.5	84.8	95.1	209.2	375.6
67. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	74.5	105.1	148.5	190.6	244.6	298.1	526.8	696.0
68. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	73.5	95.6	136.4	183.0	241.7	300.9	555.4	744.7
69. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	73.0	91.6	122.2	154.9	191.7	244.1	502.1	681.9
70. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	74.7	91.1	120.4	152.0	189.6	242.9	525.5	728.8
71. SKIN TEMP. NO. 8	SKNT8	DEG.FAHR	71.7	73.9	76.3	77.9	80.0	82.5	103.4	144.4
72. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	73.2	67.5	73.7	98.1	113.6	95.2	113.0	170.7
73. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	73.6	129.7	308.6	482.3	633.8	766.0	1159.8	1307.8
74. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	73.9	138.7	336.1	524.9	692.5	837.3	1285.1	1462.4
75. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	74.1	133.8	313.9	469.4	589.1	678.6	898.4	950.6
76. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	74.3	129.9	317.5	482.7	614.4	720.6	1002.1	1040.6
77. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	75.1	75.4	76.3	76.6	78.0	79.8	87.1	93.4
78. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	74.9	75.3	75.8	75.9	77.6	79.5	93.7	106.5
79. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	73.8	74.3	74.1	74.9	75.5	78.7	94.5	110.4
80. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	71.7	81.5	110.4	142.1	171.3	204.1	358.5	491.3
81. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	71.9	79.8	106.5	137.1	164.4	194.1	331.6	436.8
82. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	73.5	122.0	305.4	493.8	663.8	812.2	1273.1	1454.9
83. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	73.7	113.5	295.1	419.0	557.0	691.8	1060.5	1231.1

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BELL AEROSPACE TEXTRON

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PRELIMINARY TEST REPORT - 02/HZ ENGINE S/N 1

8911

MODEL

P716 REV.01/08/86

BAROMETRIC PRESSURE 14.41 PSIA  
TIME OF RUN 1525 HRS  
LENGTH OF RUN 1000.0 SEC  
FUEL SP. GR. 60/60 MMH  
OXID SP. GR. 60/60 N2O4  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

T/C AT 0.37720 IN2  
T/C AE 15.1360 IN2  
FUEL NOM 0.0 LBS/SEC  
OXID NOM 0.0 LBS/SEC  
FSG NOM 0.0  
DSG NOM 0.0

MODEL NU 8911  
TEST DATE 03/18/86  
TEST CELL A-2  
TEST NO 4359  
T/C S/N  
INJ S/N  
F/OX VAL S/N

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	25.4	60.0	120.0	180.0	240.0	300.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	77.7	322.6	315.0	320.2	318.1	332.9	326.5	337.5
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	73.9	447.1	451.4	460.5	464.0	462.7	464.5	379.6
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	73.8	848.5	855.4	861.9	864.7	859.0	861.9	858.1
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	75.5	72.9	76.5	97.7	125.2	135.5	146.1	151.6
66.			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	76.4	539.8	779.1	1132.3	1273.2	1293.7	1277.4	1277.1
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	74.5	818.7	967.8	1179.4	1277.1	1303.6	1318.1	1319.9
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	73.5	880.5	1044.2	1271.9	1374.4	1401.1	1409.5	1413.9
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	73.0	798.6	922.8	1094.2	1197.2	1234.0	1257.6	1268.2
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	74.7	860.1	999.0	1185.7	1294.4	1332.4	1359.1	1367.2
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	71.7	188.8	272.2	393.9	465.1	0.0	0.0	0.0
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	73.2	243.0	347.8	509.5	631.8	661.3	716.8	728.5
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	73.6	1368.1	1410.3	1441.1	1451.8	1448.5	1454.3	1449.3
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	73.9	1532.5	1581.0	1612.9	1624.1	1622.5	1632.0	1627.3
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	74.1	967.6	588.8	1032.3	1047.3	1050.4	1054.5	1052.8
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	74.3	1066.2	1087.1	1107.3	1113.7	1116.6	1121.2	1121.0
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	75.1	97.8	101.4	107.3	109.5	110.4	112.6	113.3
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	74.9	114.7	124.5	140.4	147.3	149.7	154.0	157.4
80.			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	73.8	122.4	139.0	169.0	193.1	205.4	212.1	216.6
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	71.7	607.4	786.8	1140.5	1278.8	1292.6	1289.0	1284.7
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	71.9	526.4	655.8	868.9	919.6	906.8	895.9	894.2
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	73.5	1528.2	1568.3	1596.8	1601.6	1597.9	1598.5	1594.6
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	73.7	1320.4	1336.4	1358.7	1374.7	1371.9	1380.5	1381.1

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BELL AEROSPACE TEXTRON

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MODEL 891L - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

MODEL NU 891L  
TEST DATE 03/18/86  
TEST CELL A-2  
TEST NU 4359  
T/C S/N  
INJ S/N  
F/OX VAL S/N

T/C AT 0.37720 IN2  
T/C AE 15.1360 IN2  
FUEL NOM 0.0 LBS/SEC  
OXID NOM 0.0 LBS/SEC  
FSG NOM 0.0  
OSG NOM 0.0

PSIA 14.41  
HRS 1525  
SEC 1000.0  
MMH 0.0  
N204 0.0  
FUEL SP-GR. 60/60  
OXID SP-GR. 60/60  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	360.0	420.0	480.0	540.0	600.0	660.0	720.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	77.7	366.6	353.3	339.4	348.7	365.4	370.5	386.4
63. FUEL CAVITY TEMP.	FCT	DEG.FAHR	73.9	390.3	407.5	421.6	427.2	430.7	426.5	434.2
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	73.8	389.9	407.4	420.4	410.0	374.7	367.8	365.7
65. SKIN TEMP. NO. 1	SKNT1	DEG.FAHR	75.5	156.4	161.1	165.8	168.7	169.3	173.1	177.3
66.			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	76.4	1280.8	1283.8	1284.7	1289.5	1289.2	1290.4	1292.1
68. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	74.5	1323.8	1329.1	1330.1	1333.6	1333.8	1336.7	830.3
69. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	73.5	1416.1	1420.8	882.7	889.6	893.0	899.4	902.0
70. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	73.0	1275.1	1282.0	1284.1	1287.8	818.7	824.5	777.6
71. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	74.7	1373.0	1381.3	1388.1	1388.1	1388.1	1392.4	1397.8
72. SKIN TEMP. NO. 8	SKNT8	DEG.FAHR	71.7	0.0	0.0	0.0	0.0	0.0	0.0	-237.6
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	73.2	752.1	798.4	828.7	787.3	800.9	811.4	824.2
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	73.6	1449.5	1454.0	1453.7	1452.0	1451.8	1456.8	1456.6
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	73.9	1627.7	1628.0	1628.9	1630.3	1629.1	1633.0	1167.6
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	74.1	1054.3	1058.7	1058.2	1056.9	1054.1	1062.3	1062.3
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	74.3	1121.8	1121.1	1120.8	1123.0	1121.0	1121.4	1122.8
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	75.1	113.7	114.9	115.7	116.1	115.7	116.3	117.5
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	74.9	160.3	164.4	134.3	140.6	325.9	334.2	341.3
80.			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	73.8	218.7	219.8	413.8	270.9	291.3	368.6	408.1
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	71.7	1283.0	1280.5	1278.7	1276.3	1274.0	833.6	427.3
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	71.9	891.9	384.2	441.0	360.8	366.5	367.3	379.8
84. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	73.5	1592.2	1595.9	1286.6	343.7	349.7	351.8	354.9
85. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	73.7	1385.8	1112.1	1049.2	492.0	415.2	407.2	408.3

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BELL AEROSPACE TEXTRON

PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

MODEL 8911

PT16 REV.01/08/86

BAROMETRIC PRESSURE 14.41 PSIA  
TIME OF RUN 1525 HRS  
LENGTH OF RUN 1009.0 SEC  
FUEL SP. GR. 60/60 MMH  
OXID SP. GR. 60/60 N2O4  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

T/C AT 0.37720 IN2  
T/C AE 15.1360 IN2  
FUEL NOM 0.0 LBS/SEC  
OXID NUM 0.0 LBS/SEC  
FSG NOM 0.0  
OSG NOM 0.0

MODEL NU 8911  
TEST DATE 03/18/86  
TEST CELL A-2  
TEST NU 4359  
T/C S/N  
INJ S/N  
F/UX VAL S/N

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	780.0	840.0	900.0	960.0	999.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	77.7	387.9	386.3	399.6	400.5	409.1
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	73.9	414.7	368.1	354.7	367.4	369.1
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	73.8	374.1	374.2	376.2	379.6	383.9
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	75.5	180.8	184.4	187.1	317.2	322.8
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	76.4	824.6	353.7	354.3	357.4	359.2
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	74.5	832.9	836.7	840.5	299.0	234.6
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	73.5	683.9	365.1	370.3	336.2	332.9
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	73.0	584.3	417.5	406.0	403.3	396.7
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	74.7	1397.1	1398.4	1402.1	1403.4	1404.1
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	71.7	0.0	-91.2	-87.3	-53.0	-34.2
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	73.2	838.4	864.4	873.2	885.5	890.3
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	73.6	1455.5	1455.7	1454.2	1446.8	1445.2
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	73.9	498.0	445.1	451.8	452.1	452.9
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	74.1	634.0	614.9	607.8	609.8	608.0
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	74.3	739.6	346.4	328.4	325.1	325.6
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	75.1	117.3	291.3	298.5	298.0	296.9
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	74.9	344.2	355.8	360.0	365.2	364.8
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	73.8	436.0	400.2	393.8	371.9	374.2
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	71.7	388.9	339.6	330.0	321.2	323.5
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	71.9	372.2	373.0	373.3	368.1	374.9
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	73.5	365.5	326.2	339.5	349.9	357.8
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	73.7	427.7	383.1	364.8	370.0	374.9



## BELL AEROSPACE TEXTRON

BAROMETRIC PRESSURE 14.23 PSIA  
 TIME OF RUN 1456 HRS  
 LENGTH OF RUN 5.0 SEC  
 FUEL SP. GR. 60/60 0.0 MMH  
 OXID SP. GR. 60/60 0.0 N2O4  
 FUEL TRIM ORIFICE  
 OXID TRIM ORIFICE

T/C AT 0.37720 IN2  
 T/C AE 15.1360 IN2  
 FUEL NOM 0.0 LBS/SEC  
 OXID NOM 0.0 LBS/SEC  
 FSG NOM 0.0  
 OSG NOM 0.0

MODEL NO 8911  
 TEST DATE 04/08/86  
 TEST CELL A-2  
 TEST NO 4360A  
 T/C S/N  
 INJ S/N  
 F/OX VAL S/N

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	4.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	83.5	91.3	100.8	109.5	117.0	121.0
63. FUEL CAVITY TEMP	FCI	DEG. FAHR	68.7	350.9	403.5	413.9	428.9	433.0
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	80.0	80.0	80.2	80.2	80.3	80.4
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	70.4	70.1	70.2	69.8	69.7	69.2
66. TUB WALL TEMPERATURE	TWT	DEG. FAHR	83.8	83.9	84.1	84.0	84.0	84.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	66.1	66.4	66.3	66.4	67.0	67.6
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	65.0	78.3	108.9	147.6	193.5	215.6
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	65.2	74.0	99.0	131.1	166.2	182.0
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	61.9	83.6	121.3	159.8	203.1	223.6
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	62.9	77.1	107.5	140.5	174.3	189.6
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	66.1	67.0	69.1	71.0	72.2	72.8
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	66.1	66.5	67.7	68.5	68.7	69.3
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	67.5	133.6	381.0	642.8	866.0	943.0
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	67.6	108.8	292.7	485.1	653.1	711.7
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	69.6	83.7	169.6	285.6	389.1	425.3
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	69.3	108.1	239.9	374.6	482.0	517.2
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	70.4	70.8	70.9	71.7	73.2	73.9
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	70.0	70.8	71.0	71.6	73.4	74.1
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	69.8	70.6	70.9	70.8	70.9	71.1
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	69.4	69.4	69.2	70.6	71.6	72.6
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	67.4	80.8	115.4	150.9	185.2	200.4
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	66.5	78.8	116.1	154.8	194.5	211.8
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	68.2	135.3	354.2	560.1	731.5	790.6
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	68.6	148.0	390.5	639.7	855.7	930.3

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BELL AEROSPACE TEXTRON

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PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

MODEL 8911

PT16 REV.01/08/86

MODEL NO 8911  
TEST DATE 04/08/86  
TEST CELL A-2  
TEST NO 4361  
T/C S/N  
INJ S/N  
F/OX VAL S/N

T/C AT 0.37720 IN2  
T/C AE 15.1360 IN2  
FUEL NOM 0.0 LBS/SEC  
OXID NOM 0.0 LBS/SEC  
FSG NOM 0.0  
DSG NOM 0.0

BAROMETRIC PRESSURE 14.23 PSIA  
TIME OF RUN 1501 HRS  
LENGTH OF RUN 5.0 SEC  
FUEL SP.GR. 60/60 0.0 M/H  
OXID SP.GR. 60/60 0.0 N204  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	4.4
62. CELL AMBIENT TEMPERATURE	TAMS	DEG.FAHR	84.3	97.6	118.5	130.9	141.3	147.9
63. FUEL CAVITY TEMP	FCT	DEG.FAHR	185.2	393.4	434.6	440.1	444.1	443.9
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	80.0	80.2	80.4	80.5	80.7	80.7
65. SKIN TEMP. NO. 1	SKNT1	DEG.FAHR	158.3	156.3	149.2	141.1	133.1	129.8
66. TUR WALL TEMPERATURE	TWT	DEG.FAHR	84.5	84.5	84.5	84.5	84.6	84.6
67. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	229.9	229.2	228.8	228.4	228.6	228.9
68. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	214.3	225.0	257.8	302.0	353.6	381.6
69. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	200.0	205.6	229.1	262.9	303.0	324.4
70. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	169.0	180.0	210.6	252.1	306.1	337.4
71. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	156.2	163.9	184.6	218.1	260.0	283.7
72. SKIN TEMP. NO. 8	SKNT8	DEG.FAHR	170.8	168.4	166.2	164.1	160.9	159.6
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	148.1	146.7	144.2	140.9	138.0	137.0
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	254.3	312.5	590.0	862.1	1084.3	1173.8
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	242.3	288.8	472.1	662.1	818.6	884.8
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	214.5	233.2	327.3	441.6	541.7	584.6
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	214.2	252.2	390.5	517.7	613.5	652.0
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	166.9	167.0	164.1	159.3	154.5	152.3
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	160.5	161.1	160.6	158.3	155.2	153.8
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	145.6	145.6	145.7	146.1	147.2	147.8
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	149.7	149.7	149.7	150.7	152.4	153.6
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	203.3	217.3	257.0	297.5	336.2	355.2
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	214.4	226.3	268.6	314.2	358.7	380.7
84. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	266.3	325.4	544.7	741.0	903.9	973.6
85. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	274.3	343.1	630.8	905.0	1129.1	1218.4

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BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE 14.23 PSIA  
TIME OF RUN 1503 HRS  
LENGTH OF RUN 5.0 SEC  
FUEL SP. GR. 60/60 0.0 MMH  
OXID SP. GR. 60/60 0.0 N2O4  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

MODEL NO 8911  
TEST DATE 04/08/86  
TEST CELL A-2  
TEST NO 4362  
T/C S/N  
INJ S/N  
F/OX VAL S/N

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	4.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	85.2	96.4	120.1	143.6	161.5	170.9
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	277.8	439.5	470.1	474.5	475.8	476.3
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	80.1	80.6	80.8	80.9	81.0	81.1
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	224.1	220.5	205.4	188.6	174.7	169.7
66. TUR WALL TEMPERATURE	TWT	DEG. FAHR	85.2	85.2	85.1	85.2	85.3	85.2
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	281.2	280.5	280.2	279.9	280.2	280.6
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	248.1	259.5	295.2	343.0	399.4	430.0
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	238.7	244.6	269.0	304.6	346.1	368.2
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	184.4	198.2	232.1	280.1	340.7	375.3
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	176.5	184.3	208.0	242.3	285.1	308.9
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	189.1	187.8	186.8	182.8	179.2	177.8
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	167.7	165.8	162.2	159.0	156.2	155.1
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	298.9	364.4	670.0	559.0	1183.3	1274.8
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	292.8	344.3	542.7	740.4	898.9	964.9
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	298.4	319.0	419.4	538.2	638.1	680.3
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	262.4	261.7	255.6	245.4	234.2	228.7
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	252.1	252.3	250.0	243.6	236.1	232.1
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	237.4	237.7	238.5	239.3	239.9	240.1
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	247.2	247.3	248.0	248.6	249.4	249.8
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	287.4	301.4	340.9	381.4	420.5	439.8
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	306.7	319.3	361.7	408.1	453.6	475.8
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	316.5	392.8	618.4	825.1	990.7	1061.3
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	322.7	408.1	745.9	1051.1	1288.8	1391.4
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR						

# BELL AEROSPACE TEXTRON

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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P716 REV.01/08/86

TESTS 4363 - 4364 CELL A-2 DATE 04/09/86 - 04/09/86 TEST REF.

## TEST HARDWARE AND PROPELLANT NOMINALS

FSG NUM (60/60) 0.0  
DSG NUM (60/60) 0.0  
FUEL NOM 0.0  
OXID NOM 0.0

CHAMBER S/N  
INJECTOR S/N  
F/OX VALVE S/N

## PERFORMANCE TEST DATA SUMMARY

TEST NO.	DUR SEC	DATA PNT SEC	MEASURED		COR	WTOT LB/SEC	C* FT/S	***F INF***		COR SEC	CF INF	CF OFF	FFP UFT	FFT	TOTAL IMPULSE LB-SEC	DPO CGR PSID	DPP COK PSID	PA
			PSIA	PERC	TEST	TEST	TEST	LBS	LBS	TEST	TEST	PSIA	PSIA	DEG.	FAHR	PSID	PSID	PSIA
4363	6.1	1.0	106.7	0.0	8.418	0.0	231210	5606.	73.87	0.0	319.5	0.0	1.835	418.	204.	74.	80.	0.0 0.066
		2.0	107.4	0.0	8.397	0.0	231222	5642.	74.56	0.0	322.5	0.0	1.840	419.	206.	74.	79.	0.0 0.067
		3.0	107.9	0.0	8.376	0.0	231296	5666.	74.99	0.0	324.2	0.0	1.843	419.	207.	74.	77.	0.0 0.068
		4.0	108.5	0.0	8.354	0.0	231392	5698.	75.57	0.0	326.6	0.0	1.846	419.	208.	74.	75.	0.0 0.069
		5.5	109.2	0.0	8.326	0.0	231742	5721.	76.17	0.0	328.7	0.0	1.850	420.	208.	73.	71.	0.0 0.069
4364	8.4	1.0	86.8	0.0	6.049	0.0	173922	6064.	59.77	0.0	343.9	0.0	1.826	301.	199.	71.	72.	0.0 0.056
		2.0	87.3	0.0	6.047	0.0	174427	6080.	60.24	0.0	345.4	0.0	1.829	301.	200.	68.	69.	0.0 0.057
		3.0	87.4	0.0	6.044	0.0	174828	6074.	60.45	0.0	345.8	0.0	1.833	302.	200.	66.	67.	0.0 0.057
		4.0	87.5	0.0	6.039	0.0	175083	6072.	60.52	0.0	345.7	0.0	1.833	302.	200.	65.	65.	0.0 0.058
		7.8	88.1	0.0	6.026	0.0	175841	6085.	60.78	0.0	345.6	0.0	1.829	302.	200.	62.	58.	0.0 0.060

BELL AEROSPACE TEXTRON

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P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

BAROMETRIC PRESSURE 14.23 PSIA  
 TIME OF RUN 1328 HRS  
 LENGTH OF RUN 6.1 SEC  
 FUEL SP. GR. 60/60 0.0 MMH  
 OXID SP. GR. 60/60 0.0 N2O4  
 FUEL TRIM ORIFICE  
 OXID TRIM ORIFICE

MODEL NU 8911  
 TEST DATE 04/09/86  
 TEST CELL A-2  
 TEST NU 4363  
 T/C S/N  
 INJ S/N  
 F/OX VAL S/N

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.5
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	85.9	94.6	113.9	129.6	143.1	163.5
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	71.3	281.2	430.9	508.5	549.9	584.1
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	71.6	398.1	459.9	479.6	492.2	503.6
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	73.2	72.8	72.5	71.4	71.0	70.9
66.			0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	70.3	70.4	70.8	70.5	70.7	73.9
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	68.7	87.7	129.9	179.5	243.3	350.1
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	68.2	78.2	109.8	148.3	192.8	279.4
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	65.3	89.0	142.3	190.9	248.2	365.2
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	65.6	79.5	112.2	150.6	191.1	276.7
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	68.7	70.8	71.9	74.2	76.8	79.7
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	69.4	70.6	70.9	71.6	72.4	73.2
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	70.9	157.7	484.0	817.1	1090.0	1392.1
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	70.1	129.2	363.0	613.8	827.2	1074.3
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	72.0	87.2	200.6	359.7	491.3	644.1
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	71.6	113.7	298.6	475.0	613.0	761.1
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	73.0	73.2	74.0	75.5	77.6	81.3
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	72.3	72.4	73.0	74.0	76.4	80.7
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	72.9	73.3	73.2	73.2	74.0	76.2
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	72.2	72.6	72.7	73.7	76.1	81.7
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	71.7	89.9	137.7	186.2	238.5	313.0
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	71.7	86.9	142.6	198.8	259.4	344.5
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	70.9	163.7	422.1	666.6	869.8	1106.3
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	71.4	198.0	609.8	1012.3	1317.6	1652.4

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## BELL AEROSPACE TEXTRON

BAROMETRIC PRESSURE 14.23 PSIA  
 TIME OF RUN 1331 HRS  
 LENGTH OF RUN 8.4 SEC  
 FUEL SP. GR. 60/60 0.0 MMH  
 OXID SP. GR. 60/60 0.0 N204  
 FUEL TRIM ORIFICE  
 OXID TRIM ORIFICE

MODEL NO 8911  
 TEST DATE 04/09/86  
 TEST CELL A-2  
 TEST NO 4364  
 T/C S/N  
 INJ S/N  
 F/OX VAL S/N

## EXTRA PARAMETERS

## PARAMETER

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	7.8
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	89.5	102.2	120.1	137.8	151.9	179.1
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	243.9	373.1	473.7	517.4	537.3	558.3
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	244.2	414.2	429.9	433.8	437.2	442.2
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	170.5	169.3	160.9	151.6	144.7	120.9
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	381.9	380.6	379.7	378.9	378.7	397.2
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	369.8	382.0	417.7	465.4	520.0	741.0
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	333.0	338.9	363.7	398.4	439.0	610.7
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	291.5	300.5	325.7	364.3	416.7	648.4
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	259.9	264.2	281.8	312.2	352.6	538.4
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	328.4	317.8	306.5	295.9	286.1	260.2
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	259.2	252.2	243.0	234.0	225.4	198.2
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	530.5	604.3	835.1	1046.5	1211.2	1572.5
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	488.7	535.7	702.4	868.9	1004.0	1292.5
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	375.2	395.0	479.2	572.0	649.2	815.9
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	368.4	407.3	535.9	651.8	737.3	901.6
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	166.9	167.6	167.3	165.1	162.0	149.9
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	191.4	190.9	187.0	180.5	173.1	154.1
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	148.2	149.1	149.5	149.6	149.7	152.9
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	160.7	161.5	162.5	164.1	166.2	173.0
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	343.0	354.5	384.0	414.6	444.5	551.8
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	363.3	371.6	401.9	436.4	470.4	579.8
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	524.2	579.8	721.7	848.2	952.0	1180.1
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	584.6	679.5	936.4	1168.6	1352.5	1795.5

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PT16 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1  
 TESTS 4365 - 4366 CELL A-2 DATE 04/10/86 - 04/10/86 TEST REF.

## TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N /  
 INJECTOR S/N /  
 F/OX VALVE S/N /  
 FSG NUM (60/60) 0.0  
 USG NUM (60/60) 0.0  
 FUEL NUM 0.0  
 OXID NUM 0.0  
 LBS/SEC  
 LBS/SEC

## PERFORMANCE TEST DATA SUMMARY

TEST NO.	DUR SEC	DATA PNT SEC	MEASURED PRESS ROUG PSIA PERC	***RATIO*** TEST COR	WTOT LB/SEC	C* FT/S	***F TEST LBS	INF*** COR LBS	**ISP TEST SEC	INF** COR SEC	CF INF	O-P PSIA	H-P PSIA	O-F DEG.	F-T FAHR	TOTAL LB-SEC	DPU CLR PSID	DPT CUR PSID	PA PSIA	
4365	10.2	1.0	104.2	0.0	7.982	0.0	224176	5647.	72.76	0.0	324.6	0.0	1.851	396.	207.	60.	66.	0.0	0.0	0.066
		2.0	104.7	0.0	7.952	0.0	223985	5677.	73.28	0.0	327.1	0.0	1.856	396.	209.	61.	65.	0.0	0.0	0.067
		3.0	105.2	0.0	7.945	0.0	224327	5698.	73.79	0.0	328.9	0.0	1.859	397.	210.	61.	64.	0.0	0.0	0.069
		4.0	105.6	0.0	7.935	0.0	224580	5711.	74.11	0.0	330.0	0.0	1.860	397.	211.	61.	62.	0.0	0.0	0.070
		5.0	106.0	0.0	7.922	0.0	224837	5726.	74.37	0.0	330.8	0.0	1.860	398.	212.	60.	60.	0.0	0.0	0.070
		9.6	107.1	0.0	7.884	0.0	226133	5753.	75.25	0.0	332.7	0.0	1.862	399.	213.	58.	50.	0.0	0.0	0.072
4366	10.2	1.0	104.1	0.0	7.962	0.0	222579	5680.	72.48	0.0	325.6	0.0	1.846	396.	210.	67.	72.	0.0	0.0	0.065
		2.0	105.0	0.0	8.014	0.0	224260	5688.	73.30	0.0	326.9	0.0	1.850	399.	213.	67.	72.	0.0	0.0	0.066
		3.0	105.6	0.0	8.022	0.0	224873	5704.	73.80	0.0	328.2	0.0	1.853	400.	214.	67.	71.	0.0	0.0	0.068
		4.0	106.0	0.0	8.009	0.0	225089	5718.	74.13	0.0	329.3	0.0	1.855	401.	214.	67.	69.	0.0	0.0	0.068
		5.0	106.2	0.0	7.992	0.0	225263	5729.	74.31	0.0	329.9	0.0	1.854	401.	215.	67.	67.	0.0	0.0	0.069
		9.6	107.3	0.0	7.944	0.0	226301	5757.	75.14	0.0	332.0	0.0	1.857	402.	216.	64.	57.	0.0	0.0	0.070

BAROMETRIC PRESSURE 14.22 PSIA  
 TIME OF RUN 1024 HRS  
 LENGTH OF RUN 10.2 SEC  
 FUEL SP. GR. 60/60  
 OXID SP. GR. 60/60  
 FUEL TRIM ORIFICE N204  
 OXID TRIM ORIFICE

T/C AT 0.37720 IN2  
 T/C AE 15.1360 IN2  
 FUEL NOM 0.0 LBS/SEC  
 OXID NOM 0.0 LBS/SEC  
 FSG NOM 0.0  
 DSG NOM 0.0

MODEL NO 891L  
 TEST DATE 04/10/86  
 TEST CELL A-2  
 TEST NO 4365  
 T/C S/N  
 INJ S/N  
 F/OX VAL S/N /

## EXTRA PARAMETERS

## PARAMETER

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	9.6
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	69.5	75.5	83.4	88.0	93.0	98.8	128.0
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	67.2	265.0	416.8	488.4	524.6	543.4	574.7
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	66.9	366.3	435.8	469.0	482.6	492.2	505.7
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	69.2	68.9	68.0	66.3	65.6	64.4	60.0
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	67.1	66.6	67.0	66.4	67.1	68.4	126.8
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	66.9	85.3	126.4	171.9	233.0	296.7	610.4
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	65.8	75.1	100.5	134.0	169.7	219.2	525.6
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	64.5	92.3	139.1	181.9	226.3	288.4	607.3
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	66.0	92.2	152.4	200.8	264.0	352.7	773.1
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	63.3	64.2	65.2	66.4	67.3	68.3	82.9
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	63.1	63.9	64.1	65.2	65.3	66.1	76.9
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	67.8	128.6	381.5	649.0	870.0	1041.0	1441.6
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	66.7	132.9	453.2	810.1	1104.1	1330.7	1947.5
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	68.0	79.1	161.2	273.6	373.3	452.8	657.5
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	66.7	125.3	381.2	637.5	833.3	974.3	1306.6
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	68.1	69.3	69.1	69.8	70.8	72.5	84.6
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	67.1	67.8	68.3	68.2	70.1	71.1	80.9
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	66.8	66.4	67.2	67.4	67.7	68.5	77.2
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	66.2	67.2	67.3	68.5	70.3	73.2	97.1
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	63.3	77.2	129.9	179.3	233.5	285.2	505.8
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	63.9	75.2	128.2	182.8	242.9	300.5	549.5
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	68.3	154.1	426.9	680.9	894.8	1066.1	1513.8
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	68.1	152.2	459.4	770.5	1026.4	1227.0	1754.5

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BELL AEROSPACE TEXTRON

PAGE 04

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

MODEL NO 8911  
TEST DATE 04/10/86  
TEST CELL A-2  
TEST NO 4366  
T/C S/N  
INJ S/N  
F/OX VAL S/N

T/C AT 0.37720 IN2  
T/C AE 15.1360 IN2  
FUEL NOM 0.0 LBS/SEC  
OXID NOM 0.0 LBS/SEC  
FSG NOM 0.0  
OSG NOM 0.0

BAROMETRIC PRESSURE 14.22 PSIA  
TIME OF RUN 1351 HRS  
LENGTH OF RUN 10.2 SEC  
FUEL SP. GR. 60/60  
OXID SP. GR. 60/60  
FUEL TRIM DRIFICE  
OXID TRIM DRIFICE

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	9.6
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	78.3	83.3	90.2	96.4	106.9	112.8	151.4
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	73.1	279.0	423.9	493.2	527.8	548.2	586.2
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	73.2	379.9	445.8	482.6	498.6	504.9	523.9
65. SKIN TEMP. NO. 1	SKNT1	DEG. FAHR	73.3	73.4	72.2	71.6	70.8	69.2	66.3
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	69.0	68.9	68.9	69.3	70.3	71.3	127.1
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	68.1	88.0	132.9	182.3	247.3	315.4	633.4
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	67.1	75.2	101.7	134.7	171.8	224.2	529.0
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	63.2	93.4	144.0	189.0	240.3	307.0	624.4
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	63.8	92.6	153.8	214.0	291.8	378.5	779.0
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	65.3	66.7	61.7	68.6	69.6	70.8	86.2
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	65.2	66.2	67.2	67.1	68.4	69.3	82.0
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	70.7	144.8	437.0	700.1	927.5	1104.7	1514.1
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	70.7	150.9	503.7	878.2	1173.6	1397.0	1988.4
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	72.9	87.7	179.6	299.6	402.4	485.6	695.5
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	72.6	140.5	432.0	681.9	876.4	1012.3	1334.0
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	74.6	74.8	75.1	75.3	76.2	78.5	88.5
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	73.7	74.1	74.8	75.3	75.7	77.1	88.1
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	73.8	73.7	73.9	75.0	74.7	75.1	84.6
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	73.4	73.4	74.4	74.6	76.3	79.8	101.8
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	70.9	88.3	139.8	191.5	246.8	298.2	510.0
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	69.6	84.7	141.3	198.9	261.0	318.9	560.0
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	72.8	161.5	431.5	688.0	902.5	1077.9	1515.5
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	71.4	171.0	494.3	810.8	1072.0	1273.7	1802.3

BELL AEROSPACE TEXTRON

PAGE 01

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

TESTS 4367 - 4368 CELL A-2 DATE 04/14/86 - 04/14/86 TEST REF.

TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N  
INJECTOR S/N  
F/OX VALVE S/N

I/C AT (AMB) .37720 IN2  
T/C AE (AMB) \*\*\*\*\* IN2

FSG NUM (60/60) 0.0  
USG NUM (60/60) 0.0  
FUEL NUM .0 LBS/SEC  
OXID NUM .0 LBS/SEC

PERFORMANCE TEST DATA SUMMARY

MEASURED

TEST NO.	DUR	DATA	*****	*****	WTOT	C*	***F	INF***	CF	QFP	FPP	UFT	FFT	TOTAL IMPULSE	DPO	DPF	PA			
	SEC	SEC	PRESS	ROUG	TEST	COR	LB/SEC	F7/S	LB	TEST	LB	SEC	SEC	PSIA	PSIA	PSID	PSIA			
67	30.0	1.0	99.1	0.0	8.038	0.0	.221861	5424.	58.93	0.0	310.7	0.0	1.844	397.	195.	69.	450.76	0.0	0.0	0.069
		2.0	100.1	0.0	8.044	0.0	.221949	5479.	69.77	0.0	314.4	0.0	1.847	397.	196.	70.	78.	0.0	0.0	0.069
		3.0	100.6	0.0	8.047	0.0	.221981	5505.	70.34	0.0	317.0	0.0	1.854	397.	196.	71.	150.79	0.0	0.0	0.069
		4.0	100.7	0.0	8.046	0.0	.221753	5516.	70.66	0.0	318.7	0.0	1.860	397.	197.	72.	80.	0.0	0.0	0.070
		5.0	100.6	0.0	8.040	0.0	.221596	5515.	70.93	0.0	320.1	0.0	1.869	397.	197.	72.	80.	0.0	0.0	0.071
		10.0	101.3	0.0	8.008	0.0	.221270	5558.	71.74	0.0	324.2	0.0	1.878	397.	197.	73.	79.	0.0	0.0	0.072
		15.0	101.9	0.0	7.984	0.0	.221316	5592.	72.25	0.0	326.5	0.0	1.880	397.	198.	74.	76.	0.0	0.0	0.073
		20.0	102.0	0.0	7.971	0.0	.221565	5590.	72.30	0.0	326.3	0.0	1.880	397.	198.	73.	74.	0.0	0.0	0.075
		29.4	102.2	0.0	7.965	0.0	.221985	5593.	71.87	0.0	323.8	0.0	1.864	397.	197.	71.	71.	0.0	0.0	0.077

4368	300.0	1.0	100.4	0.0	7.964	0.0	.220548	5531.	70.65	0.0	320.3	0.0	1.865	392.	197.	72.	76.	0.0	0.0	0.058
		2.0	100.9	0.0	7.970	0.0	.220787	5548.	71.56	0.0	324.1	0.0	1.881	393.	197.	72.	76.	0.0	0.0	0.061
		3.0	101.0	0.0	7.975	0.0	.220853	5553.	72.23	0.0	327.0	0.0	1.896	393.	197.	72.	71.	0.0	0.0	0.062
		4.0	101.2	0.0	7.971	0.0	.220824	5565.	72.89	0.0	330.1	0.0	1.910	393.	197.	72.	78.	0.0	0.0	0.063
		5.0	101.1	0.0	7.969	0.0	.220709	5566.	73.25	0.0	331.9	0.0	1.920	393.	197.	72.	78.	0.0	0.0	0.065
		10.0	101.5	0.0	7.964	0.0	.220641	5586.	74.53	0.0	337.8	0.0	1.947	393.	198.	73.	78.	0.0	0.0	0.068
		15.0	101.8	0.0	7.947	0.0	.220702	5602.	75.30	0.0	341.2	0.0	1.961	393.	198.	73.	76.	0.0	0.0	0.070
		20.0	102.0	0.0	7.933	0.0	.220928	5609.	75.84	0.0	343.3	0.0	1.971	393.	198.	72.	74.	0.0	0.0	0.071
		29.4	102.2	0.0	7.924	0.0	.221343	5610.	76.58	0.0	346.0	0.0	1.986	394.	198.	71.	71.	0.0	0.0	0.072
		60.0	102.6	0.0	7.928	0.0	.222257	5605.	77.25	0.0	347.6	0.0	1.997	394.	198.	67.	67.	0.0	0.0	0.073
		90.0	102.0	0.0	7.938	0.0	.223120	5554.	76.13	0.0	341.2	0.0	1.978	394.	197.	63.	65.	0.0	0.0	0.075
		120.0	101.8	0.0	7.944	0.0	.223780	5523.	75.00	0.0	335.1	0.0	1.954	394.	197.	60.	63.	0.0	0.0	0.075
		150.0	102.0	0.0	7.951	0.0	.224442	5521.	74.40	0.0	331.5	0.0	1.933	394.	197.	57.	60.	0.0	0.0	0.076
		180.0	102.3	0.0	7.972	0.0	.225226	5518.	73.72	0.0	327.3	0.0	1.910	394.	197.	53.	59.	0.0	0.0	0.077
		210.0	102.6	0.0	7.985	0.0	.225917	5514.	73.07	0.0	323.5	0.0	1.889	394.	197.	50.	57.	0.0	0.0	0.079
		240.0	102.8	0.0	7.990	0.0	.226367	5517.	72.35	0.0	319.6	0.0	1.865	394.	197.	48.	56.	0.0	0.0	0.077
		270.0	103.0	0.0	7.993	0.0	.226698	5516.	72.30	0.0	318.9	0.0	1.862	394.	198.	46.	54.	0.0	0.0	0.079
		299.4	103.0	0.0	8.001	0.0	.226920	5514.	71.56	0.0	315.4	0.0	1.841	394.	198.	45.	54.	0.0	0.0	0.083

BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - D2/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE 14.47 PSIA  
TIME OF RUN 1059 HRS  
LENGTH OF RUN 30.0 SEC  
FUEL SP. GR. 60/60 0.0 MMH  
OXID SP. GR. 60/60 0.0 N204  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

MODEL NO 8911  
TEST DATE 04/14/86  
TEST CELL A-2  
TEST NO 4367  
T/C S/N  
INJ S/N  
F/OX VAL S/N

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	84.3	89.9	104.0	120.8	136.1	151.3	217.0	268.8
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	68.4	165.8	330.5	429.7	479.4	496.1	477.3	476.8
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	68.6	184.6	249.7	277.7	294.6	305.8	346.8	365.6
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	81.3	81.3	81.4	81.4	81.5	81.5	81.7	81.9
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	65.5	65.9	65.5	65.7	66.1	67.0	103.8	199.2
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	66.0	78.0	108.2	142.9	181.2	229.1	483.1	704.0
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	65.1	71.8	95.0	123.5	155.3	191.0	408.4	597.8
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	63.8	79.7	107.8	141.2	174.2	217.9	504.5	727.7
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	63.9	76.6	103.0	132.9	162.5	197.6	436.8	622.0
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	64.4	65.7	66.5	67.2	68.6	69.6	83.2	116.7
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	64.9	65.7	66.4	66.3	66.8	68.0	71.4	80.3
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	66.5	117.2	350.5	596.1	805.4	977.3	1446.2	1625.3
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	66.4	99.5	294.9	503.5	684.2	832.7	1252.7	1402.6
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	68.6	80.1	158.9	262.3	354.9	431.8	664.6	769.0
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	68.6	98.9	243.2	383.3	501.8	593.5	842.9	936.9
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	70.1	70.2	70.6	71.1	72.8	75.1	90.2	104.2
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	69.0	69.3	69.4	70.2	71.5	73.4	85.4	97.5
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	69.7	70.0	70.0	69.9	70.1	70.6	75.6	86.1
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	69.5	69.5	69.4	70.4	71.8	74.9	96.3	122.1
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	68.2	80.9	118.4	155.0	194.4	238.2	422.2	591.2
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	68.4	79.0	123.1	170.8	217.2	258.0	436.1	606.8
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	66.9	130.9	354.5	581.3	776.7	940.3	1408.2	1606.9
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	67.2	123.6	350.3	565.2	762.9	929.8	1389.9	1574.0

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# BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

MODEL NU 8911  
TEST DATE 04/14/86  
TEST CELL A-2  
TEST NU 4367  
T/C S/N  
INJ S/N  
F/UX VAL S/N

BAROMETRIC PRESSURE 14.47 PSIA  
TIME OF RUN 1059 HRS  
LENGTH OF RUN 30.0 SEC  
FUEL SP.GR. 60/60 0.0 MMH  
OXID SP.GR. 60/60 0.0 N2O4  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

T/C AT 0.37720 IN2  
T/C AE 15.1360 IN2  
FUEL NOM 0.0 LBS/SEC  
OXID NOM 0.0 LBS/SEC  
FSG NOM 0.0  
DSG NOM 0.0

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	84.3	305.5	342.3
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	68.4	482.2	501.0
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	68.6	372.4	377.8
65. TUB WALL TEMPERATURE	TMT	DEG. FAHR	81.3	82.3	82.6
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	65.5	341.2	601.6
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	66.0	870.0	1074.5
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	65.1	739.2	912.4
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	63.8	863.7	585.9
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	63.9	732.7	837.0
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	64.4	159.9	250.2
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	64.9	93.0	124.3
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	66.5	1694.8	1739.7
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	66.4	1456.6	1483.2
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	68.6	822.6	872.2
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	68.6	976.1	1001.3
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	70.1	114.5	124.3
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	69.0	107.5	117.7
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	69.7	99.8	126.7
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	69.5	144.8	172.2
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	68.2	749.6	1009.5
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	68.4	761.4	1005.0
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	66.9	1685.5	1731.6
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	67.2	1643.2	1686.6

# BELL AEROSPACE TEXTRON

PAGE 01

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

0716 REV.01/08/86

BAROMETRIC PRESSURE	14.47	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1112	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/14/86
LENGTH OF RUN	300.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60	MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4368
OXID SP. GR.	60/60	N2O4	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE	0.0		DSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	85.8	91.5	110.3	127.7	144.6	157.3	217.6	265.4
63. FUEL CAVITY TEMP.	FCV	DEG. FAHR	336.2	427.9	521.8	572.6	597.2	610.7	634.0	642.8
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	336.3	335.6	357.3	368.7	375.7	380.6	390.6	393.3
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	83.6	83.7	83.6	83.6	83.6	83.6	84.0	84.3
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	403.3	402.3	401.5	400.8	401.0	402.4	441.5	529.2
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	351.8	360.3	385.3	419.3	459.5	503.9	728.6	906.1
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	324.8	329.2	347.6	374.5	407.9	444.5	632.5	784.0
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	248.6	257.3	277.1	308.8	352.0	401.9	657.4	838.6
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	221.8	229.7	249.8	279.0	315.4	357.8	570.5	719.1
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	252.6	245.7	237.9	230.5	224.1	218.4	206.7	226.0
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	206.1	202.2	196.2	190.4	185.0	180.0	166.3	161.3
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	405.5	478.3	707.7	922.6	1095.3	1226.2	1579.5	1708.5
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	395.0	448.1	628.6	804.7	947.4	1062.2	1355.2	1457.5
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	384.0	404.0	481.1	563.5	631.1	685.3	836.1	901.7
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	382.6	421.0	545.5	656.4	739.1	801.6	954.2	1007.7
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	326.2	325.3	319.1	307.5	294.7	282.2	232.9	202.7
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	321.4	321.3	316.5	307.2	296.4	285.7	241.0	211.4
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	325.0	325.2	325.3	325.5	325.3	325.2	324.9	324.9
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	336.8	337.0	336.6	336.3	335.7	334.9	332.6	329.6
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	497.4	510.9	542.1	573.4	604.5	636.0	787.4	926.3
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	528.3	537.3	565.1	595.8	625.6	654.5	788.0	911.5
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	440.1	521.2	735.4	932.3	1093.8	1219.6	1589.3	1721.7
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	441.6	513.4	712.6	895.0	1045.6	1164.1	1482.9	1598.3



# BELL AEROSPACE TEXTRON

P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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BAROMETRIC PRESSURE	14.47 PSIA	T/C AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1112 HRS	T/C AE 15.1360	IN2	TEST DATE	04/14/86
LENGTH OF RUN	300.0 SEC	FUEL NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0 MMH	OXID NOM 0.0	LBS/SEC	TEST NO	4368
OXID SP.GR. 60/60	0.0	FSG NOM 0.0		I/C S/N	
FUEL TRIM ORIFICE		OSG NOM 0.0		INJ S/N	
OXID TRIM ORIFICE				F/UX VAL S/N	

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4	60.0	90.0	120.0	150.0	180.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	85.8	300.8	352.3	426.1	411.2	366.8	361.2	364.0
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	336.2	647.1	650.5	662.5	662.8	659.0	659.8	660.0
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	336.3	390.9	388.3	384.2	379.6	375.7	373.9	373.0
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	83.6	84.4	85.2	87.0	89.2	92.0	92.4	93.1
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	403.3	635.4	817.6	1102.5	1091.9	1040.1	1018.6	1011.4
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	351.8	1034.1	1183.2	1355.6	1388.1	1375.0	1373.0	1372.9
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	324.8	892.1	1016.5	1172.3	1192.8	1176.1	1164.4	1160.9
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	248.6	944.6	1033.5	1092.7	1119.0	1121.9	1152.8	1165.1
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	221.8	806.1	878.4	535.9	940.5	935.2	929.8	927.7
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	252.6	262.5	330.8	505.1	579.3	618.1	631.7	634.6
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	206.1	164.6	177.8	238.7	286.8	313.7	333.1	347.3
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	405.5	1749.4	1766.7	1763.1	1737.9	1723.3	1718.8	1713.9
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	395.0	1492.9	1504.3	1508.6	1502.4	1493.0	1487.3	1487.5
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	384.0	933.1	959.0	985.8	991.5	993.2	995.6	995.3
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	382.6	1029.2	1040.3	1050.2	1048.4	1043.5	1040.3	1040.9
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	326.2	184.5	168.8	155.6	152.8	150.7	149.6	148.2
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	321.4	192.1	171.0	158.5	155.4	153.9	151.9	150.5
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	325.0	325.1	326.1	330.1	334.0	336.2	336.2	335.8
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	336.8	327.3	323.6	319.8	319.2	317.8	314.8	312.4
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	497.4	1050.2	1218.4	1518.8	1635.4	1658.5	1660.8	1660.6
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	528.3	1024.6	1186.7	1496.8	1570.1	1582.8	1578.3	1577.3
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	440.1	1769.6	1784.9	1787.7	1770.2	1753.6	1747.5	1744.0
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	441.6	1641.3	1660.1	1654.1	1644.6	1629.0	1623.5	1623.6

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BELL AEROSPACE TEXTRON

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P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

BAROMETRIC PRESSURE	14.47	PSIA	T/C	AT 0.37720	IN2	MODEL NO	9911
TIME OF RUN	1112	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/14/86
LENGTH OF RUN	300.0	SEC	FUEL NOM	0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0	MWH	OXID NOM	0.0	LBS/SEC	TEST NO	4368
OXID SP.GR. 60/60	0.0	N204	FSG NOM	0.0		T/C S/N	
FUEL TRIM DRIFICE			OSG NOM	0.0		INJ S/N	
OXID TRIM DRIFICE						F/OX VAL S/N	/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	210.0	240.0	270.0	299.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	85.8	354.4	362.1	370.2	368.2
63. FUEL CAVITY TEMP.	FCV	DEG. FAHR	336.2	661.1	660.1	660.7	662.5
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	336.3	370.6	349.3	363.8	374.8
65. TUR WALL TEMPERATURE	TWT	DEG. FAHR	83.6	93.5	94.6	95.8	96.7
			0.0	0.0	0.0	0.0	0.0
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	403.3	1008.3	1007.1	1006.0	1005.3
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	351.8	1378.8	1384.1	1386.3	1388.6
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	324.8	1158.1	1156.3	1154.6	1153.3
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	248.6	1172.3	1193.0	1196.6	1194.7
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	221.8	929.1	927.8	928.3	927.8
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	252.6	629.9	617.4	605.9	595.9
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	206.1	361.7	367.6	376.4	385.6
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	405.5	1715.0	1716.5	1713.5	1708.0
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	395.0	1487.7	1444.9	1421.3	1397.9
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	384.0	993.9	992.2	987.1	984.0
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	382.6	1039.9	1037.6	1037.9	1036.5
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	326.2	147.2	145.6	144.1	143.3
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	321.4	149.7	149.5	148.5	147.9
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	325.0	334.8	333.4	331.7	329.8
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	336.8	310.7	308.9	306.9	305.2
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	497.4	1657.9	1656.3	1653.3	1651.9
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	528.3	1574.5	1573.9	1571.8	1571.7
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	440.1	1738.8	1739.1	1738.1	1735.9
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	441.6	1613.9	1616.0	1608.7	1605.3

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BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV. 01/08/86

TESTS 4369 - 4369 CELL A-2 DATE 04/14/86 - 04/14/86 TEST REF.

TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N / FSG NUM (60/60) 0.0  
 INJECTOR S/N / OSG NUM (60/60) 0.0  
 F/OX VALVE S/N / FUEL NUM 0.0 LBS/SEC  
 / / OXID NUM 0.0 LBS/SEC

PERFORMANCE TEST DATA SUMMARY

TEST NO.	DUR SEC	DATA PNT PRESS ROUG SEC	MEASURED ***RATIO***	WTOT	C*	***F INF***	**ISP INF**	COR	SEC	LBS	COR	LBS	TEST COR	LBS	SEC	PSIA	PSIA	DEG.FAHR	FFT	TOTAL IMPULSE LB-SEC	DPO CUR	DPF CUR	PA
4369	300.0	1.0 98.7	0.0 7.976	0.0	218678	5480.	68.52	0.0	313.3	0.0	1.841	394.	195.	81.	87.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.080
		2.0 99.8	0.0 7.974	0.0	219001	5536.	69.71	0.0	318.3	0.0	1.852	395.	196.	81.	86.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.083
		3.0 100.2	0.0 7.966	0.0	219216	5553.	70.51	0.0	321.7	0.0	1.865	395.	197.	81.	85.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.084
		4.0 100.3	0.0 7.955	0.0	219414	5552.	71.05	0.0	323.8	0.0	1.878	395.	197.	81.	84.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.085
		5.0 100.5	0.0 7.942	0.0	219464	5562.	71.47	0.0	325.7	0.0	1.885	395.	197.	81.	82.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.085
		10.0 101.3	0.0 7.902	0.0	219975	5592.	73.17	0.0	332.6	0.0	1.915	396.	198.	79.	75.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.089
		15.0 101.9	0.0 7.889	0.0	220410	5607.	74.16	0.0	336.5	0.0	1.932	396.	198.	77.	72.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.090
		20.0 101.9	0.0 7.896	0.0	220752	5609.	74.80	0.0	338.8	0.0	1.945	396.	198.	75.	71.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.091
		29.4 101.8	0.0 7.920	0.0	221213	5591.	75.24	0.0	340.1	0.0	1.959	395.	197.	73.	71.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.092
		60.0 101.5	0.0 7.949	0.0	222050	5551.	75.96	0.0	342.1	0.0	1.984	395.	197.	68.	71.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.094
		90.0 101.2	0.0 7.941	0.0	222398	5527.	75.72	0.0	340.4	0.0	1.983	394.	197.	66.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.096
		120.0 101.1	0.0 7.934	0.0	222697	5515.	74.99	0.0	336.7	0.0	1.966	393.	197.	65.	66.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.096
		150.0 101.2	0.0 7.933	0.0	223073	5509.	74.34	0.0	333.2	0.0	1.948	393.	197.	63.	64.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.096
		180.0 101.3	0.0 7.938	0.0	223570	5501.	73.48	0.0	328.7	0.0	1.924	393.	197.	61.	62.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.095
		210.0 101.4	0.0 7.943	0.0	223895	5502.	72.69	0.0	324.6	0.0	1.900	393.	197.	58.	60.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.096
		240.0 101.6	0.0 7.956	0.0	224187	5502.	71.93	0.0	320.8	0.0	1.878	393.	197.	57.	60.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.098
		270.0 101.8	0.0 7.947	0.0	224385	5509.	71.36	0.0	318.0	0.0	1.859	393.	197.	56.	58.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.104
		299.4 101.7	0.0 7.945	0.0	224615	5500.	70.55	0.0	314.1	0.0	1.839	393.	197.	56.	57.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.104

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BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE 14.47 PSIA  
TIME OF RUN 1439 HRS  
LENGTH OF RUN 300.0 SEC  
FUEL SP. GR. 60/60 MMH  
OXID SP. GR. 60/60  
FUEL TRIM ORIFICE N204  
OXID TRIM ORIFICE  
T/C AT 0.37720 IN2  
T/C AE 15.1360 IN2  
FUEL NOM 0.0 LBS/SEC  
OXID NOM 0.0 LBS/SEC  
FSG NOM 0.0  
OSG NOM 0.0  
MODEL NO 8911  
TEST DATE 04/14/86  
TEST CELL A-2  
TEST NO 4369  
T/C S/N  
INJ S/N  
F/UX VAL S/N

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	93.8	100.1	106.2	114.2	122.2	130.9	166.3	187.2
63. FUEL CAVITY TEMP	FCV	DEG. FAHR	80.0	200.9	343.5	428.4	473.0	492.3	522.5	532.6
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	80.1	209.8	266.4	294.4	309.8	320.4	339.8	340.7
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	89.0	89.2	89.1	89.3	89.3	89.3	89.6	89.6
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	73.8	73.9	73.7	73.7	74.6	75.6	113.3	212.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	71.2	84.1	113.9	147.4	185.6	234.1	494.1	714.6
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	68.5	75.4	98.2	127.2	158.5	194.8	419.0	607.5
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	64.0	81.0	111.0	144.1	177.2	219.1	514.7	737.1
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	62.2	74.3	101.3	134.2	165.8	204.3	448.4	632.8
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	69.4	71.0	72.1	73.0	74.5	75.5	90.0	126.2
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	70.4	70.6	71.2	71.1	72.0	72.7	78.0	87.5
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	75.6	134.2	391.1	628.1	838.8	1009.2	1469.9	1629.5
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	75.3	111.5	310.2	520.1	699.6	848.1	1259.0	1399.4
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	80.0	92.9	169.1	281.0	376.0	454.7	685.0	782.3
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	80.0	108.8	254.1	402.1	519.2	610.8	854.1	937.7
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	81.4	81.7	81.9	83.3	84.4	86.0	99.0	109.7
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	80.6	80.9	81.1	82.2	84.0	84.8	95.0	104.8
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	80.7	81.1	81.2	81.3	81.7	82.6	93.2	110.6
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	80.7	80.8	80.6	81.5	84.0	85.7	107.5	128.1
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	77.7	91.9	134.4	180.2	232.3	283.7	521.3	728.8
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	77.7	89.0	125.2	170.2	219.6	260.9	423.8	558.3
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	77.7	137.8	373.3	602.8	799.3	962.0	1432.1	1609.9
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	79.1	130.5	355.4	578.2	769.5	926.5	1372.7	1532.9

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.47 PSIA	T/C	AT 0.37720 IN2	MUEL NO	8911
TIME OF RUN	1439 HRS	T/C	AE 15.1360 IN2	TEST DATE	04/14/86
LENGTH OF RUN	300.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	OXID	NOM 0.0 LBS/SEC	TEST NO	4369
OXID SP. GR. 60/60	0.0	FSG	NOM 0.0	I/C S/N	
FUEL TRIM ORIFICE	0.0	OSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/OX VAL S/N	/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4	60.0	90.0	120.0	150.0	180.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	93.8	225.0	251.1	312.6	330.7	320.5	340.5	355.1
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	80.0	543.6	569.1	659.7	669.5	673.1	676.0	674.4
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	80.1	342.3	347.8	387.8	385.7	268.7	304.8	333.6
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	89.0	89.7	90.4	91.3	92.3	93.1	94.2	95.7
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	73.8	354.2	611.3	1033.2	1136.8	1165.1	1159.3	1140.4
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	71.2	876.9	1072.4	1320.0	1389.3	1405.6	1411.0	1417.3
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	68.5	747.9	916.7	1134.6	1190.0	1203.5	1200.7	1194.9
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	64.0	869.9	983.2	1082.4	1147.5	1161.1	1181.2	1211.7
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	62.2	744.1	849.5	926.9	941.8	942.5	939.9	939.8
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	69.4	170.9	260.7	399.8	446.6	469.0	478.8	491.2
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	70.4	102.5	133.7	227.8	281.2	314.3	333.9	348.3
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	75.6	1686.8	1721.9	1736.4	1737.1	1729.6	1721.5	1718.5
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	75.3	1452.7	1492.4	1510.3	1511.5	1510.4	1503.7	1500.7
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	80.0	831.9	878.6	925.1	942.4	950.6	955.1	957.5
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	80.0	974.5	1008.2	1036.4	1045.6	1051.0	1051.3	1050.8
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	81.4	116.3	124.4	139.6	145.6	147.2	147.7	147.5
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	80.6	111.5	119.5	136.9	145.6	145.7	146.5	146.8
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	80.7	126.6	149.6	203.8	235.6	254.2	266.5	275.1
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	80.7	145.4	167.0	209.6	235.8	250.2	260.1	267.0
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	77.7	902.4	1153.6	1476.4	1503.2	1497.3	1499.5	1507.1
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	77.7	669.3	848.0	1183.9	1300.2	1338.5	1346.5	1355.8
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	77.7	1675.9	1719.6	1741.9	1743.9	1738.7	1735.3	1731.4
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	79.1	1599.5	1646.2	1653.9	1649.7	1649.3	1632.3	1632.3

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BELL AEROSPACE TEXTRON

P716 REV.01/08/86

MODEL 8911

- PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE 01

BAROMETRIC PRESSURE 14.47 PSIA  
 TIME OF RUN 1439 HRS  
 LENGTH OF RUN 300.0 SEC  
 FUEL SP. GR. 60/60 0.0 MMH  
 OXID SP. GR. 60/60 0.0 N2O4  
 FUEL TRIM ORIFICE  
 OXID TRIM ORIFICE

T/C AT 0.37720 IN2  
 T/C AE 15.1360 IN2  
 FUEL NOM 0.0 LBS/SEC  
 OXID NOM 0.0 LBS/SEC  
 FSG NOM 0.0  
 OSG NOM 0.0

MODEL NU 8911  
 TEST DATE 04/14/86  
 TEST CELL A-2  
 TEST NO 4369  
 T/C S/N  
 INJ S/N  
 F/UX VAL S/N /

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	210.0	240.0	270.0	299.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	93.8	344.7	374.4	448.6	470.9
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	80.0	357.7	371.9	394.6	408.6
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	80.1	357.4	374.3	372.7	384.0
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	89.0	96.6	98.3	106.8	113.3
66.			0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	73.8	1118.8	1107.9	1105.3	1101.8
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	71.2	1424.5	1427.2	1431.5	1431.8
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	68.5	1187.6	1183.1	1182.4	1178.8
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	64.0	1235.0	1231.0	1247.6	1256.2
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	62.2	938.4	936.7	936.1	932.8
72. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	69.4	503.0	510.7	525.5	532.5
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	70.4	368.8	385.3	381.5	381.2
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	75.6	1718.5	1714.0	1710.9	1705.0
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	75.3	1500.9	1502.3	1497.4	1498.5
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	80.0	960.6	961.7	961.7	958.8
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	80.0	1051.8	1054.0	1050.9	1052.6
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	81.4	147.6	147.7	146.6	145.6
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	80.6	146.2	146.1	145.6	145.6
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	80.7	280.0	283.0	286.2	287.3
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	80.7	271.3	274.3	276.1	275.5
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	77.7	1509.8	1513.6	1520.9	1523.2
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	77.7	1362.1	1366.5	1367.9	1366.5
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	77.7	1732.2	1182.5	1196.8	1185.9
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	79.1	1630.2	1628.8	1127.8	411.5

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 OF POOR QUALITY

BELL AEROSPACE TEXTRON

P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/HZ ENGINE S/N 1

PAGE 0F

TESTS 4370 - 4370 CELL A-2 DATE 04/14/86 - 04/14/86 TEST REF.

TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N

INJECTOR S/N

F/OX VALVE S/N

T/C AT(AMB) .37720 IN2

T/C AE(AMB) \*\*\*\*\* IN2

FSG NUM (60/60)

USG NUM (60/60)

FUEL NUM

OXID NUM

LBS/SEC

LBS/SEC

PERFORMANCE TEST DATA SUMMARY

TEST NO.	DUR	MEASURED				***RATIO***				WTOT	C*	***F		INF***		CF	OFF	F+P	UFT	F+T	TOTAL	DPO	DPT	CUR	PA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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BELL AEROSPACE TEXTRON

0716 REV.01/08/86

MODEL 8911

- PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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UF

BAROMETRIC PRESSURE 14.47 PSIA  
TIME OF RUN 1450 HRS  
LENGTH OF PUN 300.0 SEC  
FUEL SP.GR. 60/60 0.0 M/H  
OXID SP.GR. 60/60 0.3 N204  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

MODEL NO 8911  
TEST DATE 04/14/86  
TEST CELL A-2  
TEST NO 4370  
I/C S/N  
INJ S/N  
F/OX VAL S/N

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	107.0	113.3	125.6	136.8	147.6	155.2	175.1	211.0
63. FUEL CAVITY TEMP	FCI	DEG. FAHR	193.3	198.8	198.7	197.2	197.2	197.2	196.7	199.8
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	196.1	196.8	196.5	196.4	196.0	195.9	196.4	199.1
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	99.2	99.3	99.3	99.5	99.4	99.4	99.5	99.7
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	403.4	402.9	402.3	402.0	402.4	404.0	447.8	541.7
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	333.8	341.9	367.6	403.0	445.4	491.8	725.1	905.0
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	328.6	333.2	352.4	381.4	416.3	455.3	652.3	808.2
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	230.3	240.1	262.3	296.8	342.0	394.2	557.1	841.9
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	224.8	232.4	253.7	285.2	325.4	370.1	592.6	743.8
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	290.1	287.4	283.6	279.8	276.4	273.6	274.7	301.5
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	262.2	260.7	257.9	255.4	253.1	251.2	246.0	248.5
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	418.7	489.5	735.7	965.3	1142.2	1271.5	1611.8	1720.2
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	423.7	477.6	676.0	865.2	1015.4	1131.1	1417.7	1506.6
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	464.5	483.6	563.1	645.9	711.1	760.2	885.8	933.9
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	460.8	499.9	633.2	746.7	827.5	885.6	1016.5	1054.9
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	449.7	448.7	440.3	424.5	406.6	388.6	313.0	259.7
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	440.2	439.8	432.4	418.9	402.9	386.8	317.5	268.8
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	431.2	431.2	431.4	431.6	431.7	432.0	429.6	424.2
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	437.8	437.9	436.2	438.2	438.2	437.3	424.8	411.9
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	413.7	428.7	472.9	518.9	563.3	605.0	783.3	943.0
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	440.7	450.0	478.9	509.1	538.7	567.4	694.9	803.7
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	285.6	321.5	438.1	557.0	658.8	741.4	990.5	1077.6
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	179.2	181.0	185.8	190.5	194.3	198.3	208.4	215.0

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# BELL AEROSPACE TEXTRON

PT16 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE 0F

BAROMETRIC PRESSURE	14.47	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	14.50	HR	T/C	AE 15.1360	IN2	TEST DATE	04/14/86
LENGTH OF RUN	300.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR.	60/60	MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4370
OXID SP.GR.	60/60	N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			USG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/UUX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	25.4	60.0	90.0	120.0	150.0	180.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	107.0	245.4	306.8	409.7	433.2	406.8	410.3	400.8
63. FUEL CAVITY TEMP	FCV	DEG.FAHR	193.3	204.1	215.4	242.5	269.0	286.0	302.6	318.7
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	196.1	203.0	212.5	243.0	276.1	293.8	308.0	318.8
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	99.2	99.9	100.2	102.8	104.8	106.3	107.2	108.1
66. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	403.4	652.8	838.5	1119.4	1117.0	1099.3	1092.9	1091.3
67. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	333.8	1031.9	1174.8	1337.2	1387.4	1391.9	1387.8	1396.8
68. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	328.6	917.4	1040.0	1189.4	1203.6	1189.3	1182.4	1179.6
69. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	230.3	944.0	1024.4	1071.8	1108.0	1134.1	1161.2	1190.7
70. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	224.8	833.0	907.0	955.9	955.0	942.4	939.7	936.5
71. SKIN TEMP. NO. 8	SKNT8	DEG.FAHR	290.1	339.9	402.0	473.5	491.0	497.5	506.0	510.6
72. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	262.2	257.5	278.8	332.1	375.7	371.1	372.9	376.3
73. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	418.7	1747.8	1764.9	1751.0	1718.4	1697.3	1687.7	1684.8
74. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	423.7	1532.9	1547.5	1546.7	1526.7	1511.0	1502.3	1501.5
75. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	464.5	954.4	971.5	978.9	968.2	959.3	953.6	951.1
76. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	460.8	1068.6	1079.6	1079.3	1067.7	1059.3	1052.0	1051.2
77. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	449.7	224.2	189.0	165.4	157.4	152.3	149.7	147.5
78. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	440.2	235.1	199.3	171.1	164.3	159.7	156.7	154.2
79. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	431.2	418.7	410.6	392.0	379.0	368.9	361.1	354.8
80. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	437.8	399.7	378.3	346.6	329.6	317.8	308.9	302.2
81. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	413.7	1089.1	1301.2	1623.3	1682.0	1687.8	1688.4	1688.4
82. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	440.7	897.2	1048.1	1134.3	1418.3	1431.5	1429.6	1427.1
83. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	285.6	1103.6	1121.3	1122.5	1121.3	1116.1	1115.0	1118.3
84. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	179.2	219.2	232.4	248.0	272.1	282.3	292.5	296.1

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## BELL AEROSPACE TEXTRON

BAROMETRIC PRESSURE	14.47	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1450	HR S	T/C	AE 15.1360	IN2	TEST DATE	04/14/86
LENGTH OF RUN	300.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4370
OXID SP.GR. 60/60	0.0	N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			DSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	210.0	240.0	270.0	299.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	107.0	373.3	365.6	370.3	381.3
63. FUEL CAVITY TEMP.	FCT	DEG.FAHR	193.3	332.7	350.6	362.0	381.4
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	196.1	327.3	334.4	341.3	345.4
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	99.2	109.0	110.0	110.8	112.2
66.			0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	403.4	1092.5	1091.8	1095.2	1095.2
68. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	333.8	1405.5	1409.3	1417.2	1420.9
69. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	328.6	1177.7	1176.0	1178.0	1176.8
70. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	230.3	1207.2	1210.7	1231.5	1253.1
71. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	224.8	936.2	935.4	936.4	934.5
72. SKIN TEMP. NO. 8	SKNT8	DEG.FAHR	290.1	513.8	516.7	523.5	525.6
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	262.2	375.3	375.0	381.5	376.9
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	418.7	1682.6	1686.4	1686.6	1683.3
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	423.7	1496.3	1502.8	1498.6	1499.5
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	464.5	949.5	949.9	949.5	948.3
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	460.8	1047.6	1051.0	1047.8	1047.8
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	449.7	145.6	144.5	142.9	141.3
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	440.2	152.3	150.8	149.7	149.7
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	431.2	349.8	346.2	343.8	341.3
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	437.8	297.0	293.0	290.4	287.8
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	413.7	1689.0	1692.1	1696.4	1696.7
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	440.7	1422.8	1420.6	1422.7	1420.6
84. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	285.6	1121.4	1127.7	1131.5	1130.6
85. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	179.2	308.2	311.6	318.5	324.9

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# BELL AEROSPACE TEXTRON

PAGE 04

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

TESTS 4371 - 4371 CELL A-2 DATE 04/15/86 - 04/15/86 TEST REF.

## TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N  
INJECTOR S/N  
F/OX VALVE S/N

T/C AT(AMB) .37720 IN2  
T/C AE(AMB) \*\*\*\*\* IN2

FSG NUM (60/60) 0.0  
USG NUM (60/60) 0.0  
FUEL NUM 0.0  
OXID NUM 0.0

## PERFORMANCE TEST DATA SUMMARY

MEASURED

TEST NO.	OUR DATA	SEC	SEC	PSIA	PERC	PNT PRESS	ROUG	TEST	COR	****RATIO****	WTOT	C*	***F	INF***	**ISP	INF**	CF	OFF	F+P	UFT	FFT	TOTAL IMPULSE	DPU	CCR	PSID	DPT	COR	PSID	PA
4371	300.0	1.0	100.3	0.0	8.037	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.082
		2.0	101.6	0.0	9.042	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.085
		3.0	101.8	0.0	8.039	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.088
		4.0	102.0	0.0	8.035	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.090
		5.0	102.1	0.0	8.024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.089
		10.0	102.5	0.0	8.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.092
		15.0	103.2	0.0	8.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.092
		20.0	103.5	0.0	8.013	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.092
		29.4	103.6	0.0	8.024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.095
		60.0	102.1	0.0	8.043	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.092
		90.0	102.2	0.0	8.042	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.092
		120.0	102.2	0.0	8.037	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.092
		150.0	102.2	0.0	8.041	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.097
		180.0	102.6	0.0	8.052	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.086
		210.0	102.6	0.0	8.055	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.086
		240.0	102.7	0.0	8.061	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.085
		270.0	102.8	0.0	8.056	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.085
		299.4	102.8	0.0	8.053	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.085

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# BELL AEROSPACE TEXTRON

P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE 0F

BAROMETRIC PRESSURE	14.30	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1012	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/15/86
LENGTH OF RUN	300.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4371
OXID SP.GR. 60/60	0.0	N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			DSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/DX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	80.4	84.1	97.5	107.8	119.9	131.1	178.3	226.5
63. FUEL CAVITY TEMP.	FCI	DEG. FAHR	59.2	76.5	91.9	102.0	107.8	108.7	111.1	111.1
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	67.2	72.5	76.0	77.6	79.6	80.7	85.7	89.2
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	75.9	75.8	76.0	75.9	76.1	76.3	76.3	76.6
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	64.9	65.5	65.6	65.0	64.9	66.6	104.2	202.6
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	63.8	77.0	106.3	140.1	177.7	224.4	477.8	697.1
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	62.0	69.5	94.5	125.0	156.8	194.3	416.3	604.3
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	58.0	77.7	106.1	138.3	171.1	218.8	508.3	721.1
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	58.3	72.2	95.2	129.2	159.1	195.6	439.6	624.9
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	70.5	70.7	70.8	70.9	71.1	71.1	71.8	72.9
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	62.0	63.0	63.8	64.1	65.1	66.2	70.9	80.8
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	65.9	130.4	370.1	616.9	825.4	994.3	1446.9	1604.7
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	65.1	112.2	332.7	532.6	709.9	855.1	1248.0	1384.0
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	67.4	80.1	159.3	265.1	360.7	439.8	672.8	774.6
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	66.6	100.4	240.8	392.9	511.5	604.1	847.1	933.8
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	68.7	68.7	69.3	70.2	71.5	73.6	81.2	97.6
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	68.6	69.1	69.2	69.4	70.8	72.0	83.6	93.4
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	68.9	69.1	69.4	69.6	70.6	70.9	82.5	100.8
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	67.3	67.5	67.6	68.3	70.6	73.9	95.7	118.5
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	69.9	85.3	135.5	189.2	248.5	305.1	558.4	772.4
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	66.4	79.2	122.9	174.1	231.5	286.5	466.1	605.9
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	63.7	96.5	225.5	374.1	508.6	612.5	932.4	1077.6
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	63.8	101.5	237.5	377.3	505.8	604.1	917.0	1070.9
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR								

BELL AEROSPACE TEXTRON

P716 REV.01/08/86

MODEL 8911

- PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE UF

BAROMETRIC PRESSURE	14.30	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1012	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/15/86
LENGTH OF RUN	300.0	SEC	FUEL NOM	0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0	MMH	OXID NOM	0.0	LBS/SEC	TEST NO	4371
OXID SP.GR. 60/60	0.0	N2O4	FSG NOM	0.0		T/C S/N	
FUEL TRIM ORIFICE			CSG NOM	0.0		INJ S/N	
OXID TRIM ORIFICE					F/UX VAL S/N		/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4	60.0	90.0	120.0	150.0	180.0
62. CELL AMBIENT TEMPERATURE	TAMR	DEG. FAHR	80.4	270.6	333.3	436.2	471.5	483.9	486.6	490.7
63. FUEL CAVITY TEMP	FCI	DEG. FAHR	59.2	120.5	228.2	652.3	674.2	679.3	685.8	691.7
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	67.2	93.8	108.8	337.2	367.3	283.7	316.8	353.6
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	75.9	76.9	77.3	79.4	80.9	82.5	84.6	86.1
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	64.9	345.9	601.8	975.7	1011.6	1013.4	1016.8	1023.7
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	63.8	856.4	1049.4	1275.7	1332.1	1363.4	1372.7	1386.0
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	62.0	745.7	916.8	1129.0	1160.5	1166.3	1172.9	1176.0
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	58.0	849.9	962.0	1038.2	1083.5	1133.5	1168.5	1214.4
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	58.3	736.8	846.1	924.4	935.7	939.1	944.8	946.9
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	70.5	74.4	78.8	93.7	113.4	130.3	132.6	149.7
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	62.0	95.4	128.7	241.1	295.9	331.4	353.2	369.3
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	66.9	1661.7	1705.4	1703.3	1702.6	1703.1	1266.8	389.6
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	65.1	1439.2	1471.8	1486.8	1493.4	1496.7	1497.0	1499.4
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	67.4	824.9	873.3	909.2	925.7	937.9	945.8	951.0
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	66.6	973.7	1004.6	1031.1	1040.1	1047.3	1052.4	1056.1
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	68.7	106.2	113.3	128.0	134.0	136.8	138.2	138.7
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	68.6	101.2	105.4	125.9	134.7	137.1	139.0	141.0
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	68.9	119.6	148.8	210.2	253.1	276.5	290.4	300.3
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	67.3	135.0	156.6	189.2	214.0	229.3	239.3	246.1
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	69.9	954.5	1219.0	1593.7	1675.0	1687.5	1687.5	1691.3
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	66.4	725.7	502.9	1160.2	1226.9	1252.5	1265.2	1271.1
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	63.7	1119.9	1130.6	1116.2	1130.3	1155.1	1196.1	1089.7
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	63.8	1117.9	1130.7	1108.5	1118.8	1135.7	1171.2	341.6

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# BELL AEROSPACE TEXTRON

P716 REV. 01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE 01

BAROMETRIC PRESSURE	14.30 PSIA	T/C	AT 0.37720 IN2	MODEL NU	8911
TIME OF RUN	1012 HRS	T/C	AE 15.1360 IN2	TEST DATE	04/15/86
LENGTH OF RUN	300.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0 M44	OXID	NOM 0.0 LBS/SEC	TEST NU	4371
OXID SP. GR. 60/60	0.0 N204	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE		OSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/DX VAL S/N	

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	210.0	240.0	270.0	299.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	80.4	485.7	492.1	503.4	503.0
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	59.2	615.8	378.7	398.2	414.6
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	67.2	365.5	363.7	364.6	363.8
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	75.9	86.7	87.8	88.9	89.8
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	64.9	1023.9	1024.2	1025.5	1026.6
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	63.8	1393.8	1404.4	1415.7	1422.9
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	62.0	1181.2	1207.9	1218.8	1224.9
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	58.0	1243.4	1286.8	1330.9	1351.3
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	58.3	951.4	585.4	1012.6	1041.0
71. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	70.5	393.4	402.5	405.5	403.9
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	62.0	390.7	400.6	409.5	418.7
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	66.9	391.8	402.7	413.8	418.8
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	65.1	1499.6	1500.7	1498.3	1499.4
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	67.4	954.8	729.3	733.9	741.0
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	66.6	1057.4	1060.2	1059.5	1059.3
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	68.7	139.0	139.2	138.8	139.0
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	68.6	141.7	143.4	143.7	144.2
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	68.9	305.9	310.2	313.8	316.1
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	67.3	250.1	252.8	254.9	255.6
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	69.9	1691.9	1693.3	1696.4	1696.8
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	66.4	1276.9	1280.7	1282.9	1263.0
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	63.7	1069.4	1076.9	1085.7	777.5
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	63.8	356.4	357.7	355.1	365.7

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BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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TESTS 4372 - 4372 CELL A-2 DATE 04/15/86 - 04/15/86 TEST REF.

TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N		FSG NUM (60/60)	0.0
INJECTOR S/N		USG NUM (60/60)	0.0
F/OX VALVE S/N	/	FUEL NUM	0.0
		OXID NUM	0.0
		LBS/SEC	
		LBS/SEC	

PERFORMANCE TEST DATA SUMMARY

PERFORMANCE TEST DATA SUMMARY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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TEST NO.	DUR	DATA	PNT	SEC	PSIA	ROUG	TEST	COR	***RATIO***	WTOT	C*	***F	INF***	COR	LBS	TEST	COR	LBS	SEC	**ISP	INF**	CF	UPF	FFP	DEG.	FAHR	FET	TOTAL	DPO	UPF	PA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
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BELL AEROSPACE TEXTRON

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MODEL 8911

- PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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BAROMETRIC PRESSURE	14.30	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1027	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/15/86
LENGTH OF RUN	300.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60	MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4372
OXID SP. GR.	60/60	C.0	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE		N204	OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	94.7	100.2	117.1	133.7	151.6	167.0	228.1	281.5
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	241.5	241.6	241.6	241.6	241.6	241.6	242.3	243.9
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	418.2	372.8	374.0	372.7	371.9	371.6	395.8	388.6
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	87.2	87.1	87.2	87.1	87.5	87.4	87.8	87.8
66.			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	414.6	414.1	413.6	413.0	413.4	415.1	458.4	550.8
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	343.5	352.0	377.4	412.4	454.2	499.7	729.4	907.8
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	336.2	341.5	361.1	390.1	425.2	463.4	659.1	812.5
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	235.7	245.4	267.5	302.1	346.7	397.5	658.9	841.7
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	228.6	236.6	257.3	287.8	326.9	371.2	590.3	738.7
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	162.7	164.9	168.1	170.1	175.1	180.4	202.4	222.3
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	268.3	266.4	263.7	260.7	258.1	255.7	249.2	250.6
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	164.2	166.0	169.7	174.0	179.8	185.6	212.7	260.6
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	434.3	502.9	707.7	890.9	1035.3	1144.5	1415.2	1487.2
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	358.8	370.0	417.1	464.3	501.2	530.2	611.0	638.9
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	469.1	510.4	642.6	752.6	830.9	885.9	1016.0	1049.2
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	452.3	451.3	442.7	426.5	408.5	390.3	311.7	255.5
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	444.3	443.7	436.2	422.1	405.5	388.6	317.5	266.7
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	437.0	437.1	437.2	438.1	438.2	438.2	432.5	425.0
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	439.2	439.4	435.6	440.1	439.6	438.6	421.9	405.4
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	423.9	441.1	487.5	534.9	580.5	621.8	791.0	951.2
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	433.8	444.5	471.4	499.5	527.0	552.0	661.8	767.3
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	300.2	334.2	454.9	570.7	673.2	753.1	969.7	1035.1
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	198.8	200.3	203.5	206.2	209.2	212.2	222.0	227.9

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BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - U2/H2 ENGINE S/N 1

MODEL 8911

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.30	PSIA	T/C	AT 0.37720	IN2	MODEL NU	8911
TIME OF RUN	1027	HR S	T/C	AF 15.1360	IN2	TEST DATE	04/15/86
LENGTH OF RUN	300.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60	MMH	OXID	NOM 0.0	LBS/SEC	TEST NU	4372
OXID SP. GR.	60/60	N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE	0.0		OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4	60.0	90.0	120.0	150.0	180.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	94.7	317.3	372.4	455.5	491.3	504.9	507.1	515.2
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	241.5	246.1	250.9	274.1	306.2	343.3	384.8	416.2
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	418.2	376.4	376.4	379.4	376.8	375.8	373.8	374.2
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	87.2	88.7	89.2	91.3	93.2	96.1	98.4	101.4
66.			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	414.6	658.4	838.2	1110.9	1128.2	1081.4	1062.6	1053.8
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	343.5	1033.8	1171.6	1336.2	1390.6	1392.4	1397.2	1410.9
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	336.2	919.2	1036.2	1176.2	1201.0	1180.1	1173.9	1169.7
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	235.7	940.3	1018.2	1068.6	1120.5	1148.2	1194.1	1227.0
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	228.6	826.1	898.0	940.5	941.6	935.0	933.9	932.1
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	162.7	240.6	266.4	319.1	354.3	385.0	411.9	422.3
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	268.3	258.2	277.6	309.3	345.1	359.1	384.1	397.7
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	164.2	736.4	1078.4	129.3	372.1	398.9	423.3	434.9
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	434.3	1509.9	1514.2	1507.8	1492.0	1487.9	1481.0	1480.4
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	358.8	648.9	665.6	701.9	723.4	732.7	742.8	741.4
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	469.1	1064.3	1068.9	1066.5	1056.6	1053.1	1050.0	1048.3
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	452.3	217.4	179.0	153.9	149.6	146.3	290.5	285.9
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	444.3	231.2	192.0	160.8	154.3	150.8	188.4	359.0
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	437.0	420.1	410.3	386.6	371.5	360.7	353.0	348.0
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	439.2	389.6	366.3	325.6	306.6	295.1	287.1	282.1
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	423.9	1106.0	1325.8	1652.7	1707.6	1711.8	1712.1	1132.4
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	433.8	858.1	989.6	1205.6	1280.0	1198.7	847.3	844.1
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	300.2	1057.3	1063.4	1054.3	1038.6	1056.0	1068.1	1084.6
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	198.8	234.1	239.3	262.2	287.7	323.0	355.0	374.2

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PRELIMINARY TEST REPORT - 02/HZ ENGINE S/N 1

MODEL 8911

P716 REV.01/08/96

MODEL NO 8911  
TEST DATE 04/15/86  
TEST CELL A-2  
TEST NO 4372  
T/C S/N  
INJ S/N  
F/OX VAL S/N

BAROMETRIC PRESSURE 14.30 PSIA  
TIME OF RUN 1027 HRS  
LENGTH OF RUN 300.0 SEC  
FUEL SP. GR. 60/60 0.0 MMH  
OXID SP. GR. 60/60 0.0 N204  
FUEL TRIM OFFICE  
OXID TRIM OFFICE

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	210.0	240.0	270.0	299.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	94.7	526.5	540.9	534.4	535.2
63. FUEL CAVITY TEMP.	FACT	DEG. FAHR	241.5	439.2	464.3	488.8	479.7
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	418.2	398.2	414.7	428.3	426.1
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	87.2	102.9	105.4	108.0	113.2
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	414.6	1047.4	1046.2	1056.6	378.5
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	343.5	1418.2	1418.6	1426.1	1433.3
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	336.2	1171.1	1183.9	1199.2	565.9
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	235.7	1257.4	1297.0	1335.4	1355.7
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	228.6	932.4	547.1	581.0	999.1
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	162.7	437.0	447.7	458.5	464.0
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	268.3	407.4	412.2	419.7	421.0
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	164.2	440.7	455.9	468.5	483.2
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	434.3	1475.3	1466.4	1461.4	1458.3
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	358.8	752.5	766.6	768.4	765.1
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	469.1	1046.4	1040.1	1035.5	1033.2
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	452.3	296.9	370.6	358.6	382.3
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	444.3	381.2	389.8	400.4	401.7
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	437.0	344.0	341.2	338.5	336.2
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	439.2	277.8	274.3	271.1	259.4
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	423.9	1140.6	1511.0	1670.0	1506.3
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	433.8	855.5	868.7	869.0	866.6
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	300.2	422.2	405.1	382.5	394.1
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	198.8	388.0	405.9	409.5	414.2

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BELL AEROSPACE TEXTRON

P716 REV.01/08/86

MODEL 8911

- PRELIMINARY TEST REPORT - D2/H2 ENGINE S/N 1

PAGE 0F

TESTS 4373 - 4373 CELL A-2 DATE 04/15/86 - 04/15/86 TEST REF.

TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N	FSG NUM (60/60)	0.0
INJECTOR S/N	OSG NUM (60/60)	0.0
F/OX VALVE S/N	FUEL NOM	0.0
	OXID NOM	0.0
	LBS/SEC	LBS/SEC

PERFORMANCE TEST DATA SUMMARY

TEST NO.	DUR	DATA	PNT PRESS	ROUG	TEST	COR	***RATIO***	WTOT	C*	***F	INF***	**ISP	INF**	COR	SEC	CF	OFF	FFP	UFT	FFT	TOTAL IMPULSE	DPU	CCR	DPT	PA
SEC	SEC	PSIA	PERC	LB/SEC	FT/S	LB	LB	LB	LB	LB	LB	LB	LB	LB	LB	PSIA	PSIA	DEG.	FAHR	PSID	PSID	PSID	PSID	PSID	PSIA
300.0	1.0	99.9	0.0	7.981	0.0	0.0	0.0	220172	5513	69.11	0.0	313.9	0.0	1.833	397.	197.	80.	88.	0.0	0.0	0.0	0.0	0.0	0.0	0.033
	2.0	100.7	0.0	7.977	0.0	0.0	0.0	220430	5550	70.11	0.0	318.0	0.0	1.845	397.	198.	79.	87.	0.0	0.0	0.0	0.0	0.0	0.0	0.033
	3.0	101.1	0.0	7.972	0.0	0.0	0.0	220697	5562	70.84	0.0	321.0	0.0	1.858	397.	198.	78.	86.	0.0	0.0	0.0	0.0	0.0	0.0	0.033
	4.0	101.4	0.0	7.966	0.0	0.0	0.0	221002	5575	71.57	0.0	323.8	0.0	1.870	397.	198.	77.	84.	0.0	0.0	0.0	0.0	0.0	0.0	0.035
	5.0	101.7	0.0	7.956	0.0	0.0	0.0	221221	5586	72.19	0.0	326.3	0.0	1.881	396.	199.	76.	82.	0.0	0.0	0.0	0.0	0.0	0.0	0.036
	10.0	102.2	0.0	7.927	0.0	0.0	0.0	222476	5580	74.06	0.0	332.9	0.0	1.921	396.	199.	71.	73.	0.0	0.0	0.0	0.0	0.0	0.0	0.052
	15.0	102.9	0.0	7.932	0.0	0.0	0.0	223649	5587	75.31	0.0	336.8	0.0	1.941	396.	199.	66.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.061
	20.0	103.2	0.0	7.946	0.0	0.0	0.0	224566	5584	76.05	0.0	338.7	0.0	1.953	396.	199.	62.	65.	0.0	0.0	0.0	0.0	0.0	0.0	0.063
	29.4	103.6	0.0	7.972	0.0	0.0	0.0	225685	5576	76.81	0.0	340.3	0.0	1.965	395.	199.	56.	63.	0.0	0.0	0.0	0.0	0.0	0.0	0.066
	60.0	102.7	0.0	7.997	0.0	0.0	0.0	226613	5506	76.60	0.0	338.0	0.0	1.977	395.	198.	51.	63.	0.0	0.0	0.0	0.0	0.0	0.0	0.074
	90.0	101.8	0.0	7.986	0.0	0.0	0.0	226736	5453	75.43	0.0	332.7	0.0	1.964	396.	198.	49.	61.	0.0	0.0	0.0	0.0	0.0	0.0	0.079
	120.0	101.8	0.0	7.980	0.0	0.0	0.0	226853	5449	74.61	0.0	328.9	0.0	1.944	395.	198.	48.	59.	0.0	0.0	0.0	0.0	0.0	0.0	0.080
	150.0	102.1	0.0	7.978	0.0	0.0	0.0	227083	5459	74.17	0.0	326.6	0.0	1.927	395.	198.	47.	58.	0.0	0.0	0.0	0.0	0.0	0.0	0.080
	180.0	102.1	0.0	7.977	0.0	0.0	0.0	227370	5452	73.56	0.0	323.5	0.0	1.911	395.	198.	45.	56.	0.0	0.0	0.0	0.0	0.0	0.0	0.080
	210.0	102.2	0.0	7.979	0.0	0.0	0.0	227553	5456	72.96	0.0	320.6	0.0	1.892	394.	198.	44.	56.	0.0	0.0	0.0	0.0	0.0	0.0	0.080
	240.0	102.4	0.0	7.977	0.0	0.0	0.0	227712	5464	72.43	0.0	318.1	0.0	1.874	394.	198.	42.	54.	0.0	0.0	0.0	0.0	0.0	0.0	0.080
	270.0	102.4	0.0	7.969	0.0	0.0	0.0	227693	5463	71.72	0.0	315.0	0.0	1.856	393.	198.	42.	53.	0.0	0.0	0.0	0.0	0.0	0.0	0.080
	299.4	102.5	0.0	7.964	0.0	0.0	0.0	227700	5466	70.99	0.0	311.8	0.0	1.836	393.	198.	41.	52.	0.0	0.0	0.0	0.0	0.0	0.0	0.080

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# BELL AEROSPACE TESTRUN

P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE 01

BAROMETRIC PRESSURE	14.30 PSIA	T/C	AT 0.37720 IN2	MODEL NO	8911
TIME OF RUN	1144 HRS	T/C	AE 15.1360 IN2	TEST DATE	04/15/86
LENGTH OF RUN	300.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0 MMH	OXID	NOM 0.0 LBS/SEC	TEST NO	4373
OXID SP. GR. 60/60	0.0 N204	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE		OSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	95.9	99.4	113.3	128.5	141.5	156.7	218.9	276.1
63. FUEL CAVITY TEMP	FCT	DEG.FAHR	80.0	80.1	81.1	82.6	84.3	84.5	88.1	91.0
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	84.5	88.0	92.9	96.5	99.8	103.3	111.8	120.9
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	88.3	88.2	88.4	88.5	88.6	88.7	88.8	89.0
66.			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	89.8	89.5	89.7	89.6	89.5	89.4	90.3	90.8
68. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	80.3	79.3	58.3	42.5	36.6	38.5	128.5	246.6
69. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	92.2	97.3	111.1	127.8	146.1	164.8	283.7	417.5
70. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	84.4	99.8	126.5	156.1	196.6	254.5	547.5	762.0
71. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	82.0	94.7	120.2	148.0	178.2	222.3	463.2	641.5
72. LOAD CELL TEMPERATURE	LCT	DEG.FAHR	91.4	93.6	95.4	97.6	99.5	101.2	119.7	110.8
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	91.1	91.3	91.1	90.9	91.1	91.0	94.4	103.8
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	95.6	110.4	152.4	200.4	249.3	291.8	423.8	507.0
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	128.2	180.8	396.4	604.1	779.0	918.5	1288.2	1405.5
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	91.7	92.8	97.1	103.5	108.5	113.0	127.4	134.7
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	132.6	156.3	283.5	401.2	489.9	553.9	690.0	713.1
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	113.6	115.4	116.9	115.7	113.3	110.1	95.4	96.2
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	88.0	88.4	88.2	88.5	88.3	88.6	88.9	90.6
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	142.8	143.0	143.1	143.3	144.1	145.0	151.6	166.3
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	141.3	141.3	141.2	141.9	144.5	146.7	162.1	175.6
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	106.0	111.9	132.3	151.5	169.0	185.4	282.0	391.0
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	110.3	117.7	142.9	173.0	207.1	242.4	372.6	448.2
84. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	86.5	88.5	94.4	100.1	105.4	109.9	121.1	127.9
85. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	86.6	89.7	98.5	108.0	116.3	123.4	149.9	163.4

BELL AEROSPACE TEXTRON

P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE 01

BAROMETRIC PRESSURE 14.30 PSIA  
TIME OF RUN 1144 HRS  
LENGTH OF RUN 300.0 SEC  
FUEL SP. GR. 60/60 0.0 MMH  
OXID SP. GR. 60/60 0.0 N204  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

T/C AT 0.37720 IN2  
FUEL AE 15.1360 IN2  
OXID NOM 0.0 LBS/SEC  
FSG NOM 0.0 LBS/SEC  
DSG NOM 0.0

MODEL NU 8911  
TEST DATE 04/15/86  
TEST CELL A-2  
TEST NU 4373  
T/C S/N  
INJ S/N

F/U X VAL S/N

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4	60.0	90.0	120.0	150.0	180.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	95.9	314.6	372.3	451.0	483.4	502.8	510.1	514.1
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	80.0	93.9	95.9	125.7	170.3	308.9	652.1	233.6
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	84.5	136.0	142.1	142.9	160.3	242.7	206.2	228.8
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	88.3	89.3	89.9	92.3	94.2	96.3	98.6	100.2
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	89.8	91.9	94.3	107.7	122.6	138.5	152.1	168.1
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	80.3	350.0	479.6	645.3	701.5	734.2	755.1	785.2
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	92.2	490.2	559.1	1084.5	709.0	761.6	1235.8	1236.6
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	84.4	888.3	987.9	1053.0	1076.7	1131.6	1161.5	1209.6
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	82.0	750.9	852.2	923.9	927.9	928.8	929.1	930.6
71. SKIN TEMP. NO. 8	LCT	DEG. FAHR	91.4	106.6	187.5	142.9	289.5	348.9	365.7	365.9
72. LOAD CELL TEMPERATURE	SKNT9	DEG. FAHR	91.1	117.7	146.9	246.2	291.5	315.3	337.0	354.1
73. SKIN TEMP. NO. 9	SKNT10	DEG. FAHR	95.6	527.1	531.7	990.2	594.1	401.9	906.9	973.0
74. SKIN TEMP. NO. 10	SKNT11	DEG. FAHR	128.2	1450.1	1472.5	1490.2	1481.2	1482.6	1484.1	1482.1
75. SKIN TEMP. NO. 11	SKNT12	DEG. FAHR	91.7	142.2	159.3	215.2	245.7	383.3	402.4	463.4
76. SKIN TEMP. NO. 12	SKNT13	DEG. FAHR	132.6	713.8	704.7	694.0	687.5	691.3	697.8	701.8
77. SKIN TEMP. NO. 13	SKNT14	DEG. FAHR	113.6	90.0	63.6	42.2	71.3	131.8	125.9	82.0
78. SKIN TEMP. NO. 14	SKNT15	DEG. FAHR	88.0	93.1	97.6	120.1	142.4	160.9	179.0	199.3
79. SKIN TEMP. NO. 15	SKNT16	DEG. FAHR	142.8	179.2	205.2	258.2	287.3	304.8	314.8	320.6
80. SKIN TEMP. NO. 16	SKNT17	DEG. FAHR	141.3	187.5	203.0	230.2	245.0	253.6	258.5	261.4
81. SKIN TEMP. NO. 17	SKNT18	DEG. FAHR	106.0	485.1	610.2	825.7	959.8	1015.7	1017.1	962.9
82. SKIN TEMP. NO. 18	SKNT19	DEG. FAHR	110.3	512.6	648.5	835.5	818.6	810.4	831.0	896.5
83. SKIN TEMP. NO. 19	SKNT20A	DEG. FAHR	86.5	138.7	151.0	148.8	149.1	148.9	186.1	152.9
84. SKIN TEMP. NO. 20A	SKNT21A	DEG. FAHR	86.6	177.6	213.9	195.3	231.7	302.0	371.9	311.9
85. SKIN TEMP. NO. 21A										

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# BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

MODEL NO 8911

TEST DATE 04/15/86

TEST CELL A-2

TEST NO 4373

T/C S/N

INJ S/N

F/UX VAL S/N

BAROMETRIC PRESSURE 14.30 PSIA

TIME OF RUN 1144 HRS

LENGTH OF RUN 300.0 SEC

FUEL SP.GR. 60/60 0.3 MMH

OXID SP.GR. 60/60 0.3 N204

FUEL TRIM ORIFICE

OXID TRIM ORIFICE

T/C AT 0.37720 IN2

T/C AE 15.1360 IN2

FUEL NOM 0.0 LBS/SEC

OXID NOM 0.0 LBS/SEC

FSG NOM 0.0

DSG NOM 0.0

## EXTRA PARAMETERS

### PARAMETER

SYMBOL UNITS STATIC 210.0 240.0 270.0 299.4

62. CELL AMBIENT TEMPERATURE

63. FUEL CAVITY TEMP

64. NOZZLE LAND TEMP.

65. TUB WALL TEMPERATURE

66. SKIN TEMP. NO. 3

67. SKIN TEMP. NO. 4

68. SKIN TEMP. NO. 5

69. SKIN TEMP. NO. 6

70. SKIN TEMP. NO. 7

71. LOAD CELL TEMPERATURE

72. SKIN TEMP. NO. 9

73. SKIN TEMP. NO. 10

74. SKIN TEMP. NO. 11

75. SKIN TEMP. NO. 12

76. SKIN TEMP. NO. 13

77. SKIN TEMP. NO. 14

78. SKIN TEMP. NO. 15

79. SKIN TEMP. NO. 16

80. SKIN TEMP. NO. 17

81. SKIN TEMP. NO. 18

82. SKIN TEMP. NO. 19

83. SKIN TEMP. NO. 20A

84. SKIN TEMP. NO. 21A

85. SKIN TEMP. NO. 21A

TAMB DEG.FAHR 95.9 512.8 522.7 530.0 532.0

FCI DEG.FAHR 80.0 364.7 399.9 429.1 450.9

NLT DEG.FAHR 84.5 348.6 376.4 405.6 410.1

TWT DEG.FAHR 88.3 101.7 103.6 105.2 106.7

SKNT3 DEG.FAHR 89.8 181.7 196.9 212.0 224.8

SKNT4 DEG.FAHR 80.3 807.0 823.5 843.1 853.7

SKNT5 DEG.FAHR 92.2 1236.7 1237.0 1236.7 1237.2

SKNT6 DEG.FAHR 84.4 1237.3 1269.8 1294.6 1317.5

SKNT7 DEG.FAHR 82.0 934.9 932.9 933.4 934.3

LCT DEG.FAHR 91.4 387.4 391.5 393.0 395.9

SKNT9 DEG.FAHR 91.1 366.9 378.8 386.9 397.4

SKNT10 DEG.FAHR 95.6 1035.0 1011.8 961.8 971.5

SKNT11 DEG.FAHR 128.2 1482.0 1484.3 1481.2 1481.3

SKNT12 DEG.FAHR 91.7 507.7 524.3 438.9 429.3

SKNT13 DEG.FAHR 132.6 705.5 710.3 713.2 715.3

SKNT14 DEG.FAHR 113.6 47.0 240.5 379.4 392.1

SKNT15 DEG.FAHR 88.0 216.6 232.5 247.5 260.0

SKNT16 DEG.FAHR 142.8 324.5 327.3 328.2 329.3

SKNT17 DEG.FAHR 141.3 262.5 263.2 230.8 164.6

SKNT18 DEG.FAHR 106.0 837.1 866.8 909.9 924.1

SKNT19 DEG.FAHR 110.3 955.1 929.7 881.1 889.6

SKNT20A DEG.FAHR 86.5 248.0 267.1 294.0 293.7

SKNT21A DEG.FAHR 86.6 320.5 328.0 335.4 345.0

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TESTS 4374 - 4374 CELL A-2 DATE 04/15/86 - 04/15/86 TEST REF.

## TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N		FSG NUM (60/60)	0.0
INJECTOR S/N		DSG NUM (60/60)	0.0
F/OX VALVE S/N	/	FUEL NUM	0.0
		OXID NUM	0.0
		LBS/SEC	LBS/SEC

## PERFORMANCE TEST DATA SUMMARY

TEST NO.	OUR	MEASURED										PERFORMANCE TEST DATA SUMMARY																
		*****					*****					*****					*****											
		DATA	PNT	SEC	PSIA	PERC	TEST	COR	WTOT	C*	TEST	LBS	COR	LBS	TEST	SEC	COR	SEC	INF	CF	OFF	FFP	OFT	FFT	TOTAL IMPULSE	DPU COR	DPF CUR	PA
SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC
4374	300.0	1.0	99.9	0.0	7.942	0.0	218452	5555.	68.54	0.0	313.7	0.0	1.819	395.	197.	86.	93.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.030
	2.0	100.8	0.0	7.942	0.0	218784	5593.	69.46	0.0	317.5	0.0	1.828	395.	198.	85.	93.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.030	
	3.0	101.2	0.0	7.938	0.0	219034	5614.	70.35	0.0	321.2	0.0	1.842	395.	198.	84.	91.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.031	
	4.0	101.5	0.0	7.928	0.0	219248	5621.	71.00	0.0	323.8	0.0	1.855	395.	198.	84.	90.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.034	
	5.0	101.7	0.0	7.920	0.0	219454	5630.	71.54	0.0	326.0	0.0	1.864	395.	199.	83.	88.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.036	
	10.0	102.1	0.0	7.905	0.0	220768	5618.	73.36	0.0	332.3	0.0	1.905	395.	199.	77.	80.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.048	
	15.0	103.0	0.0	7.910	0.0	222068	5631.	74.79	0.0	336.8	0.0	1.926	395.	199.	71.	75.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.061	
	20.0	103.3	0.0	7.922	0.0	222993	5627.	75.49	0.0	338.5	0.0	1.937	395.	199.	67.	71.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.063	
	29.4	103.6	0.0	7.940	0.0	224187	5613.	76.26	0.0	340.2	0.0	1.952	395.	199.	61.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.063	
	60.0	102.2	0.0	7.954	0.0	225274	5513.	75.81	0.0	336.5	0.0	1.966	394.	198.	55.	65.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.063	
	90.0	102.3	0.0	7.936	0.0	225509	5509.	75.93	0.0	336.7	0.0	1.968	394.	198.	53.	62.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.078	
	120.0	102.3	0.0	7.926	0.0	225790	5503.	75.47	0.0	334.2	0.0	1.956	393.	198.	51.	59.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.079	
	150.0	102.5	0.0	7.931	0.0	226324	5499.	74.91	0.0	331.0	0.0	1.938	393.	198.	48.	57.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.079	
	180.0	102.5	0.0	7.935	0.0	226848	5488.	74.32	0.0	327.6	0.0	1.922	393.	198.	46.	56.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.081	
	210.0	102.9	0.0	7.895	0.0	227315	5500.	73.83	0.0	324.8	0.0	1.901	393.	199.	44.	54.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.081	
	240.0	103.4	0.0	7.842	0.0	227580	5518.	73.34	0.0	322.2	0.0	1.880	392.	199.	42.	52.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.081	
	270.0	103.6	0.0	7.802	0.0	227730	5526.	72.56	0.0	318.6	0.0	1.857	392.	200.	42.	51.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.081	
	299.4	103.9	0.0	7.765	0.0	227900	5537.	71.77	0.0	314.9	0.0	1.831	392.	201.	41.	50.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.081	

BELL AEROSPACE TEXTRON

PAGE 04

PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PT16 REV.01/08/86

MODEL 8911

MODEL NO 8911  
TEST DATE 04/15/86  
TEST CELL A-2  
TEST NO 4374

BAROMETRIC PRESSURE 14.30 PSTA  
TIME OF RUN 1338 HRS  
LENGTH OF RUN 300.0 SEC  
FUEL SP.GR. 60/60 0.0 MMH  
OXID SP.GR. 60/60 0.0 N2O4  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

F/OX VAL S/N /

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	98.8	105.9	119.4	129.1	144.2	159.3	209.7	262.7
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	79.2	79.9	80.6	82.9	84.5	84.7	89.0	89.8
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	119.5	245.4	297.5	323.3	338.3	348.0	368.4	369.3
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	91.7	91.8	92.0	92.1	92.2	92.3	92.3	92.9
66.			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	82.9	70.5	0.0	-110.3	-227.4	0.0	0.0	0.0
69. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	74.6	72.9	50.7	33.1	25.2	25.2	111.2	226.0
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	82.4	91.1	115.9	145.8	179.4	222.1	450.1	640.5
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	71.5	88.9	117.5	149.1	187.7	243.3	535.6	753.7
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	70.6	82.0	107.8	137.4	168.0	211.8	466.1	649.0
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	98.8	98.9	99.1	99.2	99.4	99.5	101.0	103.1
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	80.5	80.9	82.1	82.0	82.9	84.2	87.4	97.4
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	95.3	154.8	365.5	576.3	750.4	888.4	1224.1	1311.5
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	100.7	162.5	374.9	588.2	769.1	917.8	1305.8	1434.5
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	80.7	81.8	85.7	90.0	94.0	97.1	108.1	112.0
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	105.9	132.4	261.0	384.2	477.1	547.0	696.8	724.9
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	91.0	91.4	92.5	93.0	92.8	93.3	95.2	97.8
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	103.0	103.0	103.3	103.5	103.4	103.5	106.8	109.5
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	114.5	114.8	114.3	114.9	115.2	115.9	127.4	142.9
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	112.9	113.0	112.6	114.1	116.4	118.5	138.9	155.7
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	90.8	87.9	82.0	72.9	72.7	59.8	103.1	174.5
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	102.2	114.2	155.2	206.6	261.6	313.4	508.0	638.2
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	95.4	141.3	313.8	466.5	589.6	698.9	912.1	981.6
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	103.4	171.7	411.9	633.7	824.2	983.4	1429.8	1597.1

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BELL AEROSPACE TEXTRON

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE UF

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.30	PSIA	T/C	AT 0.37720	IN2	MODEL NU	8911
TIME OF RUN	1338	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/15/86
LENGTH OF RUN	300.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.3	MMH	OXID	NOM 0.0	LBS/SEC	TEST NU	4374
OXID SP. GR. 60/60	0.0	N2/94	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4	60.0	90.0	120.0	150.0	180.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	98.8	299.1	356.3	456.5	485.3	491.5	494.9	495.5
63. FUEL CAVITY TEMP	FCV	DEG. FAHR	79.2	84.8	92.0	129.1	186.0	251.8	307.4	350.9
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	119.5	356.1	355.5	371.3	373.7	370.5	368.2	369.6
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	91.7	93.2	94.0	97.7	100.3	102.8	106.2	108.5
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	82.9	0.0	-285.1	80.9	118.1	129.1	135.0	141.3
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	74.6	330.3	465.4	624.8	677.4	702.4	716.0	734.5
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	82.4	780.6	950.0	1146.4	1171.4	1173.8	1179.7	1198.9
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	71.5	884.7	993.5	1057.1	1103.7	1148.2	1190.6	1240.3
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	70.6	759.4	863.9	934.6	941.9	942.9	947.1	978.2
71. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	98.8	105.6	110.1	126.4	145.1	159.6	171.0	176.7
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	80.5	113.8	145.4	261.1	316.2	349.5	363.2	383.6
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	95.3	1319.0	1285.5	1202.1	1189.8	1184.4	1180.5	1178.4
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	100.7	1477.6	1502.4	1500.5	1501.1	1497.7	1496.9	1494.5
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	80.7	114.5	118.2	236.8	273.7	191.2	193.4	211.0
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	105.9	725.6	716.3	693.1	687.8	685.1	687.3	687.3
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	91.0	98.5	99.8	103.0	107.8	115.0	124.3	132.7
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	103.0	111.2	113.7	120.5	126.1	130.1	134.7	139.1
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	114.5	157.9	184.0	249.5	282.3	300.2	310.2	316.1
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	112.9	169.6	186.6	218.8	235.8	246.2	252.3	255.2
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	90.8	133.9	354.7	666.8	743.6	762.4	768.4	790.8
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	102.2	747.0	904.7	1137.9	1205.8	1227.0	1231.0	1230.4
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	95.4	1140.6	1094.3	1047.7	1031.8	1027.0	1027.6	1010.3
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	103.4	1665.5	1713.6	1688.1	1677.9	1667.5	1656.2	1655.2

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# BELL AEROSPACE TEXTRON

PAGE 01

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

0716 REV.01/08/96

BAROMETRIC PRESSURE	14.30	PSIA	T/C	AT 0.37720	IN2	MODEL NU	8911
TIME OF PUM	1338	HR S	T/C	AE 15.1360	IN2	TEST DATE	04/15/86
LENGTH OF PUN	300.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NU	4374
OXID SP. GR. 60/60	0.0	N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/UX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	210.0	240.0	270.0	299.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	98.8	510.9	542.0	542.1	538.9
63. FUEL CAVITY TEMP	FCV	DEG. FAHR	79.2	385.9	414.9	437.5	457.5
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	119.5	364.2	360.2	356.0	355.9
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	91.7	109.7	111.4	112.5	113.9
66.			0.0	0.0	0.0	0.0	0.0
* 67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	82.9	150.1	161.8	170.4	180.2
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	74.6	747.7	758.0	768.8	781.3
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	82.4	1209.0	1215.6	1217.7	1218.5
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	71.5	1258.0	1272.9	1307.3	1332.7
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	70.6	1001.7	1033.7	1031.6	1035.4
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	98.8	186.1	193.7	199.0	203.7
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	80.5	400.2	409.4	421.9	432.0
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	95.3	1174.2	1170.0	1158.0	1168.4
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	100.7	1488.2	1479.4	1477.7	1472.4
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	80.7	227.2	242.6	251.7	271.2
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	105.9	686.7	684.2	685.6	684.5
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	91.0	141.3	149.5	155.2	162.8
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	103.0	145.1	148.5	150.6	154.6
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	114.5	319.9	321.8	322.8	322.6
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	112.9	256.4	255.8	254.7	253.1
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	90.8	792.3	799.7	806.5	871.3
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	102.2	1232.2	1230.0	1228.1	1225.1
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	95.4	1015.4	1016.8	1017.6	829.7
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	103.4	1642.5	1630.6	1626.7	1626.1

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## BELL AEROSPACE TEXTRON

TESTS 4375 - 4375 CELL A-2 DATE 04/15/86 - 04/15/86 TEST REF.

## TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N		FSG NOM (60/60)	0.0
INJECTOR S/N		OSG NOM (60/60)	0.0
F/OX VALVE S/N	/	FUEL NUM	0.0
		OXID NUM	0.0
		LBS/SEC	
		LBS/SEC	

## PERFORMANCE TEST DATA SUMMARY

TEST NO.	DUR	MEASURED				WTOT	C*	***	INF**	CF	DFP	FFP	OFT	FFT	TOTAL IMPULSE	DPO	CUR	DPF	PA
		PNT	PRESS	ROUG	TEST														
SEC	SEC	PSIA	PERC	TEST	COR	LB/SEC	FT/S	LBS	TEST	LBS	COR	TEST	SEC	SEC	PSIA	PSIA	DEG.	FAHR	LB-SEC
4375	300.0	1.0	-39.9	0.0	7.931	0.0	220994-2194	72.05	0.0	326.0	0.0	-4.785	395.	200.	77.	80.	0.0	0.0	0.0
		2.0	-48.9	0.0	7.934	0.0	221415-2683	72.98	0.0	329.6	0.0	-3.956	394.	200.	75.	79.	0.0	0.0	0.0
		3.0	-58.7	0.0	7.924	0.0	221588-3219	73.74	0.0	332.8	0.0	-3.329	393.	200.	74.	77.	0.0	0.0	0.0
		4.0	-65.0	0.0	7.918	0.0	221809-3558	74.27	0.0	334.8	0.0	-3.031	393.	200.	73.	76.	0.0	0.0	0.0
		5.0	-69.0	0.0	7.915	0.0	222127-3774	74.70	0.0	336.3	0.0	-2.869	393.	200.	72.	74.	0.0	0.0	0.0
		10.0	-92.7	0.0	7.915	0.0	223335-5043	76.24	0.0	341.4	0.0	-2.179	393.	200.	67.	69.	0.0	0.0	0.0
		15.0	-109.0	0.0	7.932	0.0	224515-5897	77.31	0.0	344.3	0.0	-1.880	393.	200.	62.	66.	0.0	0.0	0.0
		20.0	-113.3	0.0	7.951	0.0	225372-6107	77.82	0.0	345.3	0.0	-1.820	393.	200.	58.	64.	0.0	0.0	0.0
		29.4	-118.9	0.0	7.971	0.0	226312-6380	78.14	0.0	345.3	0.0	-1.743	393.	200.	54.	62.	0.0	0.0	0.0
		60.0	-159.5	0.0	7.981	0.0	227140-8529	78.69	0.0	346.4	0.0	-1.308	394.	200.	50.	60.	0.0	0.0	0.0
		90.0	-159.5	0.0	7.994	0.0	227517-8515	78.22	0.0	343.8	0.0	-1.300	395.	199.	48.	59.	0.0	0.0	0.0
		120.0	-159.5	0.0	8.002	0.0	227922-8500	76.18	0.0	334.2	0.0	-1.266	396.	199.	47.	58.	0.0	0.0	0.0
		150.0	-159.5	0.0	8.016	0.0	228344-8484	75.03	0.0	328.6	0.0	-1.247	396.	199.	45.	58.	0.0	0.0	0.0
		180.0	103.3	0.0	8.018	0.0	228702-5485	74.20	0.0	324.5	0.0	-1.905	396.	199.	42.	56.	0.0	0.0	0.0
		210.0	103.4	0.0	8.021	0.0	228973-5487	73.58	0.0	321.3	0.0	-1.886	396.	199.	42.	56.	0.0	0.0	0.0
		240.0	103.5	0.0	8.021	0.0	229078-5486	72.84	0.0	318.0	0.0	-1.866	396.	199.	40.	55.	0.0	0.0	0.0
		270.0	-159.5	0.0	8.009	0.0	229208-8452	72.29	0.0	315.4	0.0	-1.201	396.	199.	40.	54.	0.0	0.0	0.0
		299.4	-52.3	0.0	7.977	0.0	229334-2771	71.81	0.0	313.1	0.0	-3.639	395.	199.	40.	53.	0.0	0.0	0.0

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# BELL AEROSPACE TEXTRON

PAGE 0F

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.30 PSIA	T/C	AT 0.37720 IN2	MODEL NU	8911
TIME OF RUN	1357 HR S	T/C	AE 15.1360 IN2	TEST DATE	04/15/86
LENGTH OF RUN	300.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0 MMH	OXID	NOM 0.0 LBS/SEC	TEST NU	4375
OXID SP. GR. 60/60	0.0 N204	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE		OSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	112.5	122.8	141.6	155.8	169.8	184.2	244.2	288.0
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	233.4	234.2	236.8	239.6	241.1	239.7	238.3	236.0
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	451.4	401.7	407.4	410.4	411.2	408.5	403.3	394.0
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	103.5	103.6	103.7	103.7	103.7	103.7	104.3	104.6
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	221.3	198.6	119.2	29.1	-53.3	-129.6	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	169.1	164.1	141.7	127.8	127.8	137.9	250.0	371.9
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	293.7	300.3	322.5	353.7	391.1	431.8	639.2	800.4
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	208.4	221.1	245.6	282.1	328.2	380.5	650.8	841.5
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	201.4	210.7	233.5	266.9	307.5	354.0	584.3	741.3
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	159.8	159.7	159.7	159.6	159.6	159.6	159.6	159.6
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	248.0	246.8	244.7	242.7	240.9	239.2	235.6	239.9
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	307.1	388.0	603.9	788.9	925.6	1024.3	1258.7	1306.0
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	391.5	474.9	692.1	885.5	1035.3	1149.1	1422.3	1508.4
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	159.7	159.8	160.2	160.5	160.9	161.2	162.2	163.0
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	365.6	410.7	527.6	618.9	678.5	717.6	783.7	786.0
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	268.6	267.8	263.2	254.9	246.1	237.9	202.9	182.4
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	335.1	334.6	329.3	320.9	311.0	300.8	259.5	229.9
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	421.5	421.6	421.6	421.7	422.3	422.7	421.0	415.3
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	425.9	425.9	426.0	426.4	426.8	426.5	420.1	408.4
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	209.8	208.3	211.7	216.5	212.1	159.7	103.8	105.6
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	399.6	411.7	446.9	486.0	520.4	551.6	686.4	798.8
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	343.0	406.6	547.8	659.2	747.6	860.4	1079.3	1167.6
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	414.5	512.2	738.3	934.4	1094.6	1215.5	1552.5	1662.2
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR								

\* LOST THERMOCOUPLE

# BELL AEROSPACE TEXTRON

P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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BAROMETRIC PRESSURE	14.30	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1357	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/15/86
LENGTH OF RUN	300.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MM	OXID	NOM 0.0	LBS/SEC	TEST NO	4375
OXID SP. GR. 60/60	0.0	N204	FSG	NOM 0.0		I/C S/N	
FUEL TRIM ORIFICE			DSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4	60.0	90.0	120.0	150.0	180.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	112.5	325.2	374.8	458.0	464.8	487.7	503.7	497.0
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	233.4	238.1	242.8	262.9	294.1	334.3	376.5	413.7
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	451.4	391.7	388.5	382.3	377.0	372.2	369.6	369.5
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	103.5	104.9	106.0	108.3	110.7	114.3	115.5	116.7
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	221.3	-195.4	-13.6	226.6	237.3	224.1	212.0	211.6
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	169.1	464.2	573.3	709.5	760.1	771.0	767.5	779.9
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	293.7	914.5	1043.0	1192.3	1212.4	1199.1	1188.6	1186.7
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	208.4	944.3	1023.8	1082.6	1124.8	1160.7	1191.4	1247.9
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	201.4	831.8	905.5	954.5	961.0	953.1	991.4	953.3
71. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	159.8	159.8	160.8	168.9	180.1	196.7	214.4	230.7
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	248.0	250.2	273.5	314.4	373.2	379.0	399.6	418.3
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	307.1	1303.9	1273.9	1220.8	1208.8	1197.1	1196.3	1197.7
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	391.5	1530.3	1536.6	1538.8	1527.7	1516.6	1508.8	1510.4
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	159.7	164.4	167.6	182.3	202.2	223.3	243.6	260.8
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	365.6	776.3	760.2	738.0	724.9	719.2	718.2	718.7
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	268.6	170.7	164.5	159.7	161.0	163.2	166.9	170.4
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	335.1	208.5	184.2	164.9	163.5	165.0	167.3	170.8
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	421.5	409.9	401.9	380.0	368.2	360.9	355.8	352.4
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	425.9	396.0	376.7	336.5	314.4	303.1	295.6	290.6
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	209.8	242.0	469.5	738.5	806.9	828.3	825.2	829.1
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	399.6	890.2	1022.9	1214.3	1277.3	1293.5	1293.5	1293.4
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	343.0	1131.0	1074.2	1082.7	1053.3	1041.5	1052.1	1055.0
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	343.0	1131.0	1074.2	1082.7	1053.3	1041.5	1052.1	1055.0
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	414.5	1697.1	1711.0	1708.2	1687.6	1670.6	1660.8	1655.0

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BELL AERCSpace TEXTRUN

PT16 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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BAROMETRIC PRESSURE	14.30	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1357	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/15/86
LENGTH OF RUN	300.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4375
OXID SP. GR. 60/60	0.0	N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/U VAL S/N	/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	210.0	240.0	270.0	299.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	112.5	499.9	524.0	517.0	525.3
63. FUEL CAVITY TEMP	FCV	DEG. FAHR	233.4	442.8	465.6	483.0	498.6
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	451.4	368.4	366.8	367.3	368.1
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	103.5	118.2	119.8	121.6	122.7
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	221.3	217.9	223.1	232.9	246.2
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	169.1	794.1	807.6	823.4	835.5
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	293.7	1201.4	1220.0	1230.4	1237.3
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	208.4	1272.9	1320.7	1349.8	1365.7
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	201.4	970.6	1009.7	1032.1	1046.3
71. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	159.8	241.9	197.8	247.6	277.3
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	248.0	430.3	438.2	443.3	449.3
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	307.1	1196.2	1200.3	1199.5	1195.2
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	391.5	1502.6	1504.2	1502.4	1500.2
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	159.7	274.6	287.0	298.4	308.4
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	365.6	715.2	716.9	716.2	715.4
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	268.6	173.7	179.6	185.1	190.1
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	335.1	170.8	173.7	176.8	179.4
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	421.5	350.1	348.6	347.3	345.9
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	425.9	287.1	284.8	283.1	281.2
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	209.8	836.4	839.1	844.4	844.5
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	399.6	1293.3	1293.3	1294.0	1293.4
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	343.0	1050.6	1052.2	1052.0	905.4
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	414.5	1658.5	1656.2	1648.8	1643.4

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# RELL AEROSPACE TEXTRON

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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P716 REV.01/08/86

TESTS 4376 - 4376 CELL A-2 DATE 04/15/86 - 04/15/86 TEST REF.

## TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N	FSG NUM (60/60)	0.0
INJECTOR S/N	USG NUM (60/60)	0.0
F/OX VALVE S/N	FUEL NUM	0.0
	OXID NUM	0.0
	LBS/SEC	0.0
	LBS/SEC	0.0

## PERFORMANCE TEST DATA SUMMARY

TEST NO.	OUR DATA	PNT PRESS	SEC	PSIA	PERC	****RATIO****	TEST	COR	WTOT	C*	***F		COR	LBS	COR	LBS	TEST	COR	LBS	TEST	COR	SEC	INF**	CF	OPF	FFP	UFT	FFT	TOTAL	DPU	CCR	DPF	PA	
											TEST	INF**																						PSIA
4376	300.0	1.0	-4.7	0.0	7.973	0.0	216146	-263.	58.11	0.0	315.1	0.0	0.0	0.0	394.	196.	99.	105.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	2.0	-6.0	0.0	7.967	0.0	216747	-337.	69.12	0.0	318.9	0.0	0.0	0.0	395.	197.	97.	103.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3.0	-6.5	0.0	7.951	0.0	217131	-366.	70.08	0.0	322.7	0.0	0.0	0.0	395.	197.	95.	100.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4.0	-6.4	0.0	7.934	0.0	217581	-357.	70.85	0.0	325.6	0.0	0.0	0.0	395.	198.	94.	96.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	5.0	-3.1	0.0	7.920	0.0	217996	-173.	71.48	0.0	327.9	0.0	0.0	0.0	395.	198.	92.	92.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	10.0	1.3	0.0	7.881	0.0	219957	74.	73.79	0.0	335.5	0.0	0.0	0.0	395.	198.	84.	77.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	15.0	-39.4	0.0	7.895	0.0	221695	-2161.	75.21	0.0	339.2	0.0	0.0	0.0	395.	198.	76.	71.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	20.0	-60.7	0.0	7.919	0.0	223045	-3303.	76.05	0.0	341.0	0.0	0.0	0.0	395.	198.	70.	67.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	20.4	-159.5	0.0	7.957	0.0	224621	-8625.	76.87	0.0	342.2	0.0	0.0	0.0	394.	198.	62.	64.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	60.0	-159.5	0.0	8.000	0.0	226475	-8554.	76.18	0.0	336.4	0.0	0.0	0.0	395.	198.	54.	62.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	90.0	-90.9	0.0	8.014	0.0	227103	-4860.	76.31	0.0	336.0	0.0	0.0	0.0	395.	198.	51.	60.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	120.0	-54.9	0.0	8.319	0.0	227474	-2931.	75.91	0.0	333.7	0.0	0.0	0.0	395.	197.	49.	59.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	150.0	-21.3	0.0	8.023	0.0	227951	-1136.	75.45	0.0	331.0	0.0	0.0	0.0	395.	197.	47.	58.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	180.0	-4.2	0.0	8.023	0.0	228434	-224.	74.82	0.0	327.5	0.0	0.0	0.0	395.	198.	45.	57.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	210.0	-2.1	0.0	9.005	0.0	228745	-112.	74.18	0.0	324.3	0.0	0.0	0.0	395.	198.	44.	57.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	240.0	158.0	0.0	7.984	0.0	228869	8384.	73.41	0.0	320.7	0.0	0.0	0.0	395.	199.	43.	56.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	270.0	-27.1	0.0	7.963	0.0	229961	-1439.	72.49	0.0	316.6	0.0	0.0	0.0	394.	199.	42.	56.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	299.4	-8.6	0.0	7.943	0.0	229107	-457.	71.84	0.0	313.6	0.0	0.0	0.0	394.	199.	42.	55.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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# BELL AEROSPACE TEXTRON

P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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BAROMETRIC PRESSURE	14.30	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1519	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/15/86
LENGTH OF RUN	309.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60	M/H	OXID	NOM 0.0	LBS/SEC	TEST NO	4376
OXID SP. GR.	60/60	N2/O4	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	108.0	117.0	127.0	138.9	152.6	167.5	229.2	267.4
63. FUEL CAVITY TEMP	FCV	DEG. FAHR	93.7	94.1	95.4	98.2	97.9	98.6	95.7	106.7
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	163.8	262.9	311.7	336.4	348.2	356.1	370.3	390.9
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	101.0	101.1	101.2	101.1	101.2	101.3	101.8	102.1
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	113.1	101.4	23.9	-75.0	-188.2	0.0	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	96.7	94.7	73.2	55.4	47.6	48.0	138.3	260.4
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	106.2	112.7	135.7	163.9	200.6	244.2	472.7	662.4
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	85.9	101.2	126.9	156.0	193.5	251.3	549.1	770.9
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	84.4	94.5	119.7	146.2	177.5	221.6	472.2	656.1
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	105.2	105.3	105.3	105.4	105.4	105.4	105.5	106.2
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	99.9	100.9	101.3	101.5	102.1	101.8	106.2	115.6
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	129.6	173.4	396.6	613.9	788.4	925.5	1248.6	1329.5
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	135.1	182.5	401.3	615.4	797.0	944.0	1322.7	1443.3
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	106.1	106.2	106.4	106.4	106.5	106.8	108.1	110.3
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	146.2	168.6	298.6	419.5	511.9	579.3	717.9	739.0
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	126.0	126.0	126.0	125.3	124.4	123.9	122.3	120.4
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	141.3	141.2	141.3	139.9	139.1	139.0	134.6	131.8
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	153.9	154.1	154.0	154.2	154.5	155.2	164.8	177.4
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	152.1	152.1	151.9	152.8	155.0	158.0	173.9	190.9
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	132.2	136.8	150.2	161.6	171.8	182.1	168.6	385.2
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	132.6	143.2	182.0	234.8	287.2	337.2	528.4	657.2
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	123.9	154.0	295.6	429.6	533.4	612.7	870.3	793.9
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	117.3	143.1	246.6	355.8	456.0	540.9	721.0	926.6

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# BELL AEROSPACE TEXTRON

PT16 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE 01

BAROMETRIC PRESSURE	14.30 PSIA	T/C	AT 0.37720 IN2	MODEL NO	8911
TIME OF RUN	1519 HRS	T/C	AE 15.1360 IN2	TEST DATE	04/15/86
LENGTH OF RUN	300.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0 MMH	OXID	NOM 0.0 LBS/SEC	TEST NO	4376
OXID SP.GR. 60/60	0.0 M204	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE		USG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4	60.0	90.0	120.0	150.0	180.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	108.0	303.4	363.1	470.3	497.6	497.7	507.0	505.2
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	93.7	109.2	114.7	147.2	209.7	272.3	322.8	363.1
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	163.8	391.2	390.4	376.5	375.0	373.1	372.1	371.2
65. TUR WALL TEMPERATURE	TWT	DEG. FAHR	101.0	102.5	103.5	107.6	114.1	116.8	119.9	122.0
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	113.1	0.0	-223.3	127.6	169.6	176.5	180.8	183.1
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	96.7	368.4	497.5	649.1	696.9	721.1	735.2	753.9
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	106.2	799.3	960.8	1149.4	1180.2	1186.5	1186.9	1184.4
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	85.9	900.2	1005.0	1059.1	1110.0	1152.1	1185.5	1235.7
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	84.4	766.1	864.7	932.5	942.4	943.0	948.0	949.6
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	105.2	106.3	107.5	118.7	141.5	166.3	189.7	212.1
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	99.9	130.9	160.4	268.6	315.4	340.4	365.5	383.7
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	129.6	1334.9	1299.3	1205.4	1196.1	1193.1	1191.0	1192.4
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	135.1	1475.8	1498.2	1504.3	1504.7	1503.1	1505.9	1506.7
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	106.1	111.8	115.4	138.8	168.6	195.9	220.2	240.8
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	146.2	732.7	723.6	704.5	700.3	699.9	703.0	704.9
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	126.0	119.7	120.0	122.8	128.2	135.9	145.6	151.6
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	141.3	130.1	128.2	130.1	135.4	140.8	145.7	149.7
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	153.9	192.9	217.7	267.1	294.0	309.5	318.3	323.3
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	152.1	202.1	215.9	238.1	251.4	259.8	264.6	267.3
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	132.2	513.8	681.4	909.0	973.1	984.2	983.9	990.8
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	132.6	762.3	916.9	1164.6	1240.2	1257.2	1259.5	1255.6
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	123.9	767.3	609.5	832.6	824.8	833.3	840.6	817.4
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	117.3	993.0	1026.8	984.8	1006.8	1026.5	1043.9	1070.0
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR								

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# BELL AEROSPACE TESTRON

PAGE 01

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.30	PSIA	T/C	AT 0.37720	IN2	MODEL NU	8911
TIME OF RUN	1519	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/15/86
LENGTH OF RUN	300.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR.	60/60	0.0	OXID	NOM 0.0	LBS/SEC	TEST NU	4376
OXID SP.GR.	60/60	0.0	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	210.0	240.0	270.0	299.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	108.0	519.7	520.1	525.8	537.2
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	93.7	395.2	419.2	440.6	456.2
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	163.8	368.8	367.1	366.4	363.5
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	101.0	122.5	123.7	124.6	125.6
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	113.1	192.9	198.0	207.1	216.4
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	96.7	768.4	787.4	795.0	808.9
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	106.2	1184.4	1182.3	1205.0	1218.1
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	85.9	1259.0	1281.0	1313.5	1342.3
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	84.4	951.0	948.0	974.7	1008.2
71. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	105.2	232.0	247.9	262.3	274.5
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	99.9	397.7	409.7	421.4	432.2
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	129.6	1189.9	1192.9	1191.3	1190.9
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	135.1	1505.7	1500.5	1492.6	1496.7
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	106.1	259.3	273.9	287.5	298.9
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	146.2	706.9	706.4	708.9	709.5
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	126.0	160.4	168.1	173.8	181.7
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	141.3	154.5	159.1	163.8	168.1
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	153.9	325.8	327.4	328.1	328.9
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	152.1	268.4	268.5	268.7	268.2
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	132.2	987.9	989.1	1000.7	994.2
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	132.6	1253.7	1251.0	1251.4	1250.5
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	123.9	852.1	859.1	802.1	648.7
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	117.3	1076.3	1091.0	1115.2	1109.6

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BELL AEROSPACE TEXTRON

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PAGE 01

P716 REV.01/08/86

TESTS 4377 - 4377 CELL A-2 DATE 04/15/86 - 04/15/86 TEST REP.

TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N		FSG NUM (60/60)	0.0
INJECTOR S/N		DSG NUM (60/60)	0.0
F/OX VALVE S/N	/	FUEL NUM	0.0
		OXID NUM	0.0
		LBS/SEC	
		LBS/SEC	

PERFORMANCE TEST DATA SUMMARY

TEST NO.	OUR	DATA	PNT	SEC	PSIA	PERC	TEST	COR	WTOT	C*	***F	INF***	**ISP	INF**	CF	OFF	FFP	OFF	FFT	TOTAL	DPO	DPR	PA
4377	300.0	1.0	-0.7	0.0	8.032	0.0	-42.70	79	0.0	324.2	0.0	*****	392.	197.	86.	89.	0.0	0.0	0.0	0.0	0.0	0.0	0.031
		2.0	-0.7	0.0	8.019	0.0	-42.71	72	0.0	327.8	0.0	*****	391.	197.	82.	87.	0.0	0.0	0.0	0.0	0.0	0.0	0.031
		3.0	-0.7	0.0	8.005	0.0	-41.72	64	0.0	331.5	0.0	*****	391.	197.	81.	84.	0.0	0.0	0.0	0.0	0.0	0.0	0.031
		4.0	-0.7	0.0	7.991	0.0	-41.73	32	0.0	334.1	0.0	*****	390.	197.	80.	81.	0.0	0.0	0.0	0.0	0.0	0.0	0.031
		5.0	-0.7	0.0	7.975	0.0	-41.73	83	0.0	336.0	0.0	*****	390.	197.	79.	78.	0.0	0.0	0.0	0.0	0.0	0.0	0.033
		10.0	-0.8	0.0	7.958	0.0	-41.75	81	0.0	342.2	0.0	*****	390.	197.	72.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.048
		15.0	-0.8	0.0	7.979	0.0	-41.76	91	0.0	344.9	0.0	*****	390.	197.	65.	63.	0.0	0.0	0.0	0.0	0.0	0.0	0.059
		20.0	-0.8	0.0	8.002	0.0	-41.77	55	0.0	346.0	0.0	*****	390.	197.	60.	61.	0.0	0.0	0.0	0.0	0.0	0.0	0.061
		29.4	-0.8	0.0	8.034	0.0	-41.78	15	0.0	346.7	0.0	*****	391.	197.	54.	59.	0.0	0.0	0.0	0.0	0.0	0.0	0.063
		60.0	-0.9	0.0	8.057	0.0	-41.78	76	0.0	347.5	0.0	*****	392.	197.	49.	57.	0.0	0.0	0.0	0.0	0.0	0.0	0.065
		90.0	-0.8	0.0	8.065	0.0	-41.76	85	0.0	338.5	0.0	*****	393.	197.	47.	57.	0.0	0.0	0.0	0.0	0.0	0.0	0.071
		120.0	-0.8	0.0	8.066	0.0	-42.75	86	0.0	333.8	0.0	*****	393.	197.	46.	57.	0.0	0.0	0.0	0.0	0.0	0.0	0.071
		150.0	-0.8	0.0	8.072	0.0	-44.75	16	0.0	330.3	0.0	*****	393.	197.	45.	57.	0.0	0.0	0.0	0.0	0.0	0.0	0.073
		180.0	-0.8	0.0	8.074	0.0	-42.74	43	0.0	326.9	0.0	*****	393.	197.	44.	57.	0.0	0.0	0.0	0.0	0.0	0.0	0.075
		210.0	-0.8	0.0	8.076	0.0	-45.73	78	0.0	323.8	0.0	*****	392.	197.	42.	57.	0.0	0.0	0.0	0.0	0.0	0.0	0.075
		240.0	-0.9	0.0	8.074	0.0	-44.73	05	0.0	320.5	0.0	*****	392.	197.	42.	57.	0.0	0.0	0.0	0.0	0.0	0.0	0.075
		270.0	-0.8	0.0	8.072	0.0	-42.72	36	0.0	317.3	0.0	*****	392.	197.	42.	57.	0.0	0.0	0.0	0.0	0.0	0.0	0.077
		299.4	-0.8	0.0	8.066	0.0	-42.71	77	0.0	314.8	0.0	*****	392.	197.	42.	56.	0.0	0.0	0.0	0.0	0.0	0.0	0.076

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# BELL AEROSPACE TEXTRON

P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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BAROMETRIC PRESSURE	14.30	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1537	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/15/86
LENGTH OF RUN	300.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4377
OXID SP. GR. 60/60	0.0	N2O4	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/UX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	123.7	130.4	146.5	162.9	177.8	191.5	252.1	295.1
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	237.0	235.6	237.4	238.5	238.8	238.5	238.6	239.2
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	450.2	406.1	411.8	412.3	411.8	410.9	402.8	395.5
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	111.5	111.5	111.5	111.5	111.5	111.5	112.0	112.4
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	238.1	220.9	142.5	51.2	-32.7	-102.4	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	183.6	178.0	155.4	140.9	139.3	148.1	263.6	387.4
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	294.4	299.5	320.3	351.3	388.5	428.9	637.2	799.4
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	209.3	219.7	243.0	277.5	321.9	373.4	648.7	843.5
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	202.8	210.3	231.8	262.9	302.8	349.9	580.5	737.8
71. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	178.5	178.5	178.4	178.4	178.3	178.3	178.2	178.1
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	249.3	248.2	246.3	244.3	242.5	241.2	238.5	243.4
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	316.8	380.7	595.0	788.9	931.8	1033.7	1273.5	1319.9
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	394.1	458.6	672.3	868.6	1021.3	1139.3	1422.3	1505.8
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	175.5	175.6	175.9	176.2	176.4	176.6	177.6	178.3
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	377.0	411.8	527.6	621.9	684.2	725.5	792.8	793.0
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	285.1	284.8	280.2	272.4	263.9	255.6	219.2	198.1
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	345.4	345.2	340.8	332.5	323.3	313.4	273.4	243.0
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	427.4	427.5	427.6	427.8	428.1	428.5	428.2	423.7
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	432.2	432.0	432.1	432.7	433.7	433.8	430.4	421.1
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	259.9	248.4	266.5	272.5	266.4	256.2	265.3	342.3
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	398.0	407.9	444.9	488.9	531.6	571.6	728.9	844.7
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	240.3	381.0	507.8	621.7	706.5	769.6	940.8	919.8
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	283.6	304.7	417.4	517.9	592.4	648.0	828.2	909.5

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# BELL AEROSPACE TEXTRUN

P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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BAROMETRIC PRESSURE	14.30	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1537	HR S	T/C	AE 15.1360	IN2	TEST DATE	04/15/86
LENGTH OF RUN	300.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60	MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4377
OXID SP. GR.	60/60	MMH	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE	0.0	N204	OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4	60.0	90.0	120.0	150.0	180.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	123.7	327.8	382.1	450.3	502.6	520.6	538.1	540.2
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	237.0	240.0	244.1	267.6	297.9	334.3	373.5	403.4
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	450.2	389.8	383.8	379.6	371.9	370.2	372.2	369.6
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	111.5	113.3	113.4	116.0	118.3	118.6	120.0	121.0
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	238.1	-177.5	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	183.6	481.6	591.8	726.4	769.8	770.0	786.1	806.3
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	294.4	912.7	1040.1	1191.6	1215.2	1193.4	1209.9	1225.6
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	209.3	948.0	1029.1	1085.0	1137.9	1193.6	1222.2	1278.0
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	202.8	829.7	904.6	953.3	953.3	949.0	976.8	1004.3
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	178.5	178.3	179.0	186.9	201.1	221.2	242.6	261.4
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	249.3	254.1	278.2	318.4	373.7	394.7	411.7	428.5
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	316.8	1317.4	1286.5	1230.9	1209.2	1208.2	1210.6	1210.2
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	394.1	1526.5	1536.6	1539.3	1515.4	1505.3	1503.4	1507.8
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	175.5	179.8	183.2	200.9	223.3	247.2	269.3	287.7
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	377.0	781.8	765.8	743.9	729.5	724.9	724.5	726.2
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	285.1	185.5	174.8	169.6	170.3	173.5	179.8	186.7
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	345.4	220.8	195.3	171.3	169.3	171.6	175.4	179.6
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	427.4	418.3	408.7	387.6	374.0	365.2	359.1	355.3
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	432.2	409.6	390.7	344.7	321.1	307.3	299.1	293.8
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	259.9	454.9	645.7	945.5	1020.3	1029.7	1050.1	1027.5
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	398.0	934.2	1058.6	1247.2	1296.4	1299.6	1298.9	1299.4
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	240.3	916.4	711.2	394.2	419.1	407.6	386.8	476.3
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	283.6	945.2	981.7	1027.5	1031.0	1049.1	1088.5	1080.9
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR								

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# BELL AEROSPACE TEXTRON

PAGE 0F

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

MODEL NU 8911  
TEST DATE 04/15/86  
TEST CELL A-2  
TEST NU 4377

BAROMETRIC PRESSURE 14.30 PSIA  
TIME OF RUN 1537 HRS  
LENGTH OF RUN 300.0 SEC  
FUEL SP. GR. 60/60 0.0 MMH  
OXID SP. GR. 60/60 0.0 N204  
FUEL TRIM ORIFICE  
OXID TRIM ORIFICE

T/C AT 0.37720 IN2  
T/C AE 15.1360 IN2  
FUEL NOM 0.0 LBS/SEC  
OXID NOM 0.0 LBS/SEC  
FSG NOM 0.0  
DSG NOM 0.0

T/C S/N  
INJ S/N  
F/OX VAL S/N

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	210.0	240.0	270.0	299.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	123.7	545.1	553.4	549.4	555.2
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	237.0	428.0	448.4	464.5	477.4
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	450.2	370.8	371.1	371.6	373.1
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	111.5	122.3	123.8	125.3	126.9
66.			0.0	0.0	0.0	0.0	0.0
*67. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	238.1	251.1	264.4	277.8	510.0
68. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	183.6	821.0	834.2	849.9	864.3
69. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	294.4	1237.7	1245.0	1252.7	1259.2
70. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	209.3	1303.0	1337.4	1366.3	1383.9
71. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	202.8	1027.4	1039.3	1046.4	1063.8
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	178.5	277.7	291.2	303.5	312.8
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	249.3	440.4	448.3	462.9	470.1
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	316.8	1210.3	1210.0	1210.5	1001.1
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	394.1	1509.7	1512.9	1509.0	1511.7
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	175.5	302.7	315.5	326.9	336.7
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	377.0	727.9	730.7	730.9	733.0
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	285.1	193.8	200.6	207.3	213.8
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	345.4	183.5	187.8	191.8	195.6
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	427.4	352.8	351.6	350.4	349.7
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	432.2	290.5	288.6	287.0	285.8
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	259.9	1028.1	1044.8	1043.2	1039.1
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	398.0	1297.6	1298.0	1297.6	720.4
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	240.3	459.3	573.1	510.9	487.7
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	283.6	1100.7	1121.8	1134.2	1146.6

\* LOST THERMOCOUPLE

BELL AEROSPACE TETRON

PAGE OF

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

TESTS 4378 - 4385 CELL A-2 DATE 04/17/86 - 04/17/86 TEST REF.

TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N  
INJECTOR S/N  
F/OX VALVE S/N

FSG NUM (60/60) 0.0  
USG NUM (60/60) 0.0  
FUEL NOM  
OXID NOM

PERFORMANCE TEST DATA SUMMARY

MEASURED

TEST NO.	DUR	DATA	*****COR	WTOT	C*	***F	INF***	**ISP	INF**	CF	DPF	FPP	UFT	FFT	TOTAL	DPO	DPF	PA
SEC	SEC	PNT	PSIA	PERC	LB/SEC	FT/S	TEST	LBS	COR	SEC	PSIA	PSIA	DEG	FAHR	LB-SEC	PSID	PSID	PSIA
4378																		
5.0	1.0	68.3	0.0	5.866	0.0	145386	5704	46.90	0.0	322.6	0.0	1.821	249	165	68	74	0.0	0.0 0.075
	2.0	70.1	0.0	5.871	0.0	145574	5847	48.01	0.0	329.8	0.0	1.816	249	166	67	75	0.0	0.0 0.076
	3.0	70.6	0.0	5.871	0.0	145622	5886	48.49	0.0	333.0	0.0	1.821	249	166	66	76	0.0	0.0 0.076
	4.0	70.9	0.0	5.873	0.0	145713	5908	48.90	0.0	335.6	0.0	1.829	249	166	66	76	0.0	0.0 0.076
	4.4	71.0	0.0	5.872	0.0	145743	5921	49.14	0.0	337.2	0.0	1.834	249	166	66	76	0.0	0.0 0.075
4379																		
30.0	1.0	71.9	0.0	7.981	0.0	159155	5484	49.87	0.0	313.3	0.0	1.840	282	141	67	75	0.0	0.0 0.065
	2.0	72.1	0.0	7.990	0.0	159366	5497	50.38	0.0	316.2	0.0	1.852	283	141	66	75	0.0	0.0 0.066
	3.0	72.4	0.0	7.991	0.0	159429	5519	50.91	0.0	319.3	0.0	1.863	283	142	66	75	0.0	0.0 0.068
	4.0	72.6	0.0	7.987	0.0	159443	5530	51.25	0.0	321.4	0.0	1.872	283	142	66	75	0.0	0.0 0.070
	5.0	72.7	0.0	7.978	0.0	159412	5541	51.49	0.0	323.0	0.0	1.877	283	142	65	75	0.0	0.0 0.070
	10.0	73.3	0.0	7.962	0.0	159515	5578	52.14	0.0	326.8	0.0	1.887	283	142	65	74	0.0	0.0 0.073
	15.0	73.2	0.0	7.945	0.0	159517	5575	52.22	0.0	327.4	0.0	1.891	283	142	64	73	0.0	0.0 0.076
	20.0	73.3	0.0	7.932	0.0	159612	5578	52.39	0.0	326.4	0.0	1.884	283	142	64	71	0.0	0.0 0.079
	29.4	73.4	0.0	7.926	0.0	159786	5577	51.50	0.0	322.3	0.0	1.861	283	142	63	70	0.0	0.0 0.081
4380																		
30.0	1.0	73.1	0.0	6.882	0.0	153172	5796	50.94	0.0	332.6	0.0	1.848	266	153	66	72	0.0	0.0 0.067
	2.0	73.2	0.0	6.883	0.0	153446	5795	51.27	0.0	334.1	0.0	1.857	267	153	64	71	0.0	0.0 0.068
	3.0	73.2	0.0	6.886	0.0	153502	5793	51.53	0.0	335.7	0.0	1.866	267	153	64	71	0.0	0.0 0.068
	4.0	73.2	0.0	6.882	0.0	153529	5792	51.73	0.0	336.9	0.0	1.873	267	153	63	71	0.0	0.0 0.069
	5.0	73.2	0.0	6.885	0.0	153598	5791	51.90	0.0	337.9	0.0	1.879	267	153	63	71	0.0	0.0 0.069
	10.0	73.5	0.0	6.887	0.0	153672	5812	52.31	0.0	340.4	0.0	1.886	267	154	62	71	0.0	0.0 0.072
	15.0	73.6	0.0	6.883	0.0	153784	5817	52.32	0.0	340.2	0.0	1.883	268	154	61	70	0.0	0.0 0.074
	20.0	73.7	0.0	6.872	0.0	153806	5817	52.18	0.0	339.2	0.0	1.878	268	154	61	69	0.0	0.0 0.075
	29.4	73.7	0.0	6.864	0.0	153954	5815	51.64	0.0	335.4	0.0	1.858	268	154	60	68	0.0	0.0 0.078
4381																		
30.0	1.0	73.0	0.0	5.888	0.0	145957	6078	50.68	0.0	347.2	0.0	1.839	248	166	64	70	0.0	0.0 0.062
	2.0	73.1	0.0	5.892	0.0	146203	6072	50.93	0.0	348.4	0.0	1.847	248	166	63	70	0.0	0.0 0.062
	3.0	73.2	0.0	5.891	0.0	146272	6076	51.13	0.0	349.6	0.0	1.853	249	166	62	70	0.0	0.0 0.063
	4.0	73.2	0.0	5.893	0.0	146375	6070	51.31	0.0	350.5	0.0	1.859	249	166	62	70	0.0	0.0 0.063
	5.0	73.2	0.0	5.892	0.0	146376	6078	51.48	0.0	351.7	0.0	1.863	249	166	61	70	0.0	0.0 0.063
	10.0	73.1	0.0	5.889	0.0	146481	6059	51.60	0.0	352.3	0.0	1.872	249	166	60	69	0.0	0.0 0.065
	15.0	73.2	0.0	5.883	0.0	146536	6064	51.61	0.0	352.2	0.0	1.870	249	166	59	68	0.0	0.0 0.065
	20.0	73.2	0.0	5.877	0.0	146604	6063	51.43	0.0	350.8	0.0	1.863	249	166	59	68	0.0	0.0 0.067
	29.4	73.3	0.0	5.371	0.0	146631	6068	50.88	0.0	347.0	0.0	1.841	249	166	59	67	0.0	0.0 0.068
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TESTS 4378 - 4385 CELL A-2 DATE 04/17/86 - 04/17/86 TEST REF.

## TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N

T/C AT(AMB) -3720 IN2

FSG NUM (60/60) 0.0

INJECTOR S/N

T/C AE(AMB) \*\*\*\*\* IN2

USG NUM (60/60) 0.0

F/OX VALVE S/N /

FUEL NUM 0.0

LBS/SEC

LBS/SEC

## PERFORMANCE TEST DATA SUMMARY

TEST NO.	DUR	DATA	*****C*****	*****RATIO*****	WTOT	C*	***F	INF***	**ISP	INF**	CF	UPP	FFP	JFT	FFT	TOTAL	DPO	IMPULSE	CCR	CUR	PSID	PSIA	PSIA
	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC	SEC
4382	CONT.	4.0	73.1	0.0	5.874	0.0	146580	6058.	50.75	0.0	346.2	0.0	1.840	248.	166.	59.	67.	0.0	0.0	0.0	0.0	0.0	0.0
		4.4	73.1	0.0	5.874	0.0	146584	6058.	50.79	0.0	346.5	0.0	1.842	248.	166.	59.	67.	0.0	0.0	0.0	0.0	0.0	0.0
4383	30.0	1.0	73.1	0.0	4.934	0.0	139448	6370.	50.41	0.0	361.5	0.0	1.827	230.	184.	65.	71.	0.0	0.0	0.0	0.0	0.0	0.0
		2.0	73.0	0.0	4.937	0.0	139723	6345.	50.61	0.0	362.2	0.0	1.838	230.	184.	63.	71.	0.0	0.0	0.0	0.0	0.0	0.0
		3.0	72.9	0.0	4.936	0.0	139805	6337.	50.77	0.0	363.2	0.0	1.846	230.	184.	62.	71.	0.0	0.0	0.0	0.0	0.0	0.0
		4.0	72.9	0.0	4.936	0.0	139880	6330.	50.91	0.0	364.0	0.0	1.851	230.	184.	62.	71.	0.0	0.0	0.0	0.0	0.0	0.0
		5.0	72.9	0.0	4.934	0.0	139839	6336.	50.99	0.0	364.6	0.0	1.853	230.	184.	61.	71.	0.0	0.0	0.0	0.0	0.0	0.0
		10.0	72.7	0.0	4.929	0.0	139946	6308.	51.05	0.0	364.8	0.0	1.862	230.	184.	60.	70.	0.0	0.0	0.0	0.0	0.0	0.0
		15.0	72.7	0.0	4.919	0.0	140055	6306.	51.00	0.0	364.2	0.0	1.859	230.	184.	60.	68.	0.0	0.0	0.0	0.0	0.0	0.0
		20.0	72.7	0.0	4.915	0.0	140123	6305.	50.72	0.0	361.9	0.0	1.848	230.	184.	59.	67.	0.0	0.0	0.0	0.0	0.0	0.0
		29.4	72.3	0.0	4.917	0.0	140176	6306.	50.15	0.0	357.8	0.0	1.827	230.	184.	58.	67.	0.0	0.0	0.0	0.0	0.0	0.0
4384	30.0	1.0	74.0	0.0	3.963	0.0	134972	6662.	50.59	0.0	374.8	0.0	1.811	215.	211.	64.	69.	0.0	0.0	0.0	0.0	0.0	0.0
		2.0	73.9	0.0	3.963	0.0	135195	6642.	50.80	0.0	375.7	0.0	1.822	215.	211.	62.	69.	0.0	0.0	0.0	0.0	0.0	0.0
		3.0	74.0	0.0	3.962	0.0	135242	6647.	50.92	0.0	376.5	0.0	1.824	215.	211.	61.	69.	0.0	0.0	0.0	0.0	0.0	0.0
		4.0	73.5	0.0	3.963	0.0	135274	6598.	50.93	0.0	376.5	0.0	1.838	215.	211.	60.	69.	0.0	0.0	0.0	0.0	0.0	0.0
		5.0	73.7	0.0	3.963	0.0	135299	6618.	50.95	0.0	376.5	0.0	1.832	215.	211.	60.	69.	0.0	0.0	0.0	0.0	0.0	0.0
		10.0	73.2	0.0	3.960	0.0	135454	6567.	50.97	0.0	376.3	0.0	1.845	215.	211.	59.	68.	0.0	0.0	0.0	0.0	0.0	0.0
		15.0	73.6	0.0	3.953	0.0	135537	6597.	50.90	0.0	375.6	0.0	1.833	215.	212.	59.	67.	0.0	0.0	0.0	0.0	0.0	0.0
		20.0	73.4	0.0	3.952	0.0	135576	6573.	50.62	0.0	373.4	0.0	1.829	215.	212.	58.	67.	0.0	0.0	0.0	0.0	0.0	0.0
		29.4	73.1	0.0	3.954	0.0	135642	6546.	50.15	0.0	369.7	0.0	1.819	215.	212.	58.	67.	0.0	0.0	0.0	0.0	0.0	0.0
4385	30.0	1.0	73.8	0.0	2.935	0.0	127170	7049.	49.76	0.0	391.3	0.0	1.787	190.	250.	63.	69.	0.0	0.0	0.0	0.0	0.0	0.0
		2.0	73.6	0.0	2.934	0.0	127373	7015.	49.76	0.0	390.7	0.0	1.793	190.	251.	61.	69.	0.0	0.0	0.0	0.0	0.0	0.0
		3.0	73.3	0.0	2.934	0.0	127440	6990.	49.69	0.0	389.9	0.0	1.796	190.	251.	61.	69.	0.0	0.0	0.0	0.0	0.0	0.0
		4.0	73.0	0.0	2.933	0.0	127471	6959.	49.68	0.0	389.7	0.0	1.803	190.	251.	60.	68.	0.0	0.0	0.0	0.0	0.0	0.0
		5.0	72.8	0.0	2.933	0.0	127498	6939.	49.56	0.0	388.7	0.0	1.804	190.	251.	60.	68.	0.0	0.0	0.0	0.0	0.0	0.0
		10.0	72.4	0.0	2.928	0.0	127635	6892.	49.43	0.0	387.3	0.0	1.810	190.	251.	59.	67.	0.0	0.0	0.0	0.0	0.0	0.0
		15.0	72.1	0.0	2.926	0.0	127695	6862.	49.24	0.0	385.6	0.0	1.810	189.	251.	59.	66.	0.0	0.0	0.0	0.0	0.0	0.0
		20.0	72.2	0.0	2.925	0.0	127697	6867.	49.05	0.0	384.1	0.0	1.801	189.	251.	58.	66.	0.0	0.0	0.0	0.0	0.0	0.0
		29.4	72.3	0.0	2.926	0.0	127792	6875.	48.69	0.0	381.0	0.0	1.785	189.	251.	58.	66.	0.0	0.0	0.0	0.0	0.0	0.0

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# BELL AEROSPACE TEXTRON

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P716 REV.01/08/86

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

TESTS 4386 - 4393 CELL A-2 DATE 04/17/86 - 04/17/86 TEST REF.

## TEST HARDWARE AND PROPELLANT NOMINALS

CHAMBER S/N / T/C AT(AMB) .37720 IN2 FSG NOM (60/60) 0.0  
 INJECTOR S/N / T/C AE(AMB) \*\*\*\*\* IN2 USG NUM (60/60) 0.0  
 F/OX VALVE S/N / LBS/SEC .0  
 UOXID NOM LBS/SEC .0

## PERFORMANCE TEST DATA SUMMARY

TEST NO.	DUR	SEC	MEASURED		PNT PRESS	ROUG	***RATIO***		TEST COR	WTOT	C*	***F INF***		CF	OFF	F/P	OFT	FFT	TOTAL IMPULSE	DPO	CCR	COR	PSID	PSIA	PSIA	PSIA	
			SEC	PERC			TEST	PERC				TEST	PERC														TEST
4386	30.0	1.0	72.8	0.0	7.991	0.0	0.0	0.0	0.0	158854	5565.	50.90	0.0	320.4	0.0	1.854	281.	141.	64.	70.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		2.0	72.9	0.0	7.997	0.0	0.0	0.0	0.0	159070	5570.	51.36	0.0	322.9	0.0	1.866	281.	142.	63.	71.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		3.0	73.1	0.0	7.996	0.0	0.0	0.0	0.0	159088	5584.	51.78	0.0	325.5	0.0	1.877	281.	142.	62.	71.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		4.0	73.1	0.0	7.997	0.0	0.0	0.0	0.0	159118	5581.	52.09	0.0	327.4	0.0	1.889	281.	142.	62.	71.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		5.0	73.3	0.0	7.995	0.0	0.0	0.0	0.0	159136	5593.	52.39	0.0	329.2	0.0	1.896	281.	142.	62.	71.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		10.0	73.4	0.0	7.993	0.0	0.0	0.0	0.0	159207	5601.	52.90	0.0	332.3	0.0	1.910	281.	142.	62.	71.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		15.0	73.6	0.0	7.981	0.0	0.0	0.0	0.0	159282	5611.	52.73	0.0	331.1	0.0	1.900	281.	142.	61.	70.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		20.0	73.6	0.0	7.971	0.0	0.0	0.0	0.0	159356	5608.	52.38	0.0	328.7	0.0	1.887	281.	142.	61.	69.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		29.4	73.7	0.0	7.965	0.0	0.0	0.0	0.0	159420	5614.	51.57	0.0	323.5	0.0	1.855	281.	142.	60.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4387	30.0	1.0	73.9	0.0	6.982	0.0	0.0	0.0	0.0	153676	5841.	51.39	0.0	334.4	0.0	1.844	267.	152.	63.	69.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		2.0	73.9	0.0	6.981	0.0	0.0	0.0	0.0	153857	5834.	51.65	0.0	335.7	0.0	1.853	267.	152.	62.	69.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		3.0	73.9	0.0	6.978	0.0	0.0	0.0	0.0	153921	5828.	51.93	0.0	337.4	0.0	1.864	267.	152.	61.	69.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		4.0	74.0	0.0	6.979	0.0	0.0	0.0	0.0	153976	5834.	52.15	0.0	338.7	0.0	1.869	267.	152.	61.	69.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		5.0	73.9	0.0	6.977	0.0	0.0	0.0	0.0	153981	5931.	52.32	0.0	339.8	0.0	1.876	267.	152.	60.	69.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		10.0	73.9	0.0	6.978	0.0	0.0	0.0	0.0	154085	5824.	52.54	0.0	341.0	0.0	1.885	268.	152.	60.	69.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		15.0	73.9	0.0	6.973	0.0	0.0	0.0	0.0	154168	5825.	52.45	0.0	340.2	0.0	1.881	268.	153.	59.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		20.0	74.1	0.0	6.969	0.0	0.0	0.0	0.0	154204	5833.	52.28	0.0	339.0	0.0	1.872	268.	153.	59.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		29.4	74.1	0.0	6.964	0.0	0.0	0.0	0.0	154273	5836.	51.68	0.0	335.0	0.0	1.848	268.	153.	59.	67.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4388	30.0	1.0	73.2	0.0	5.915	0.0	0.0	0.0	0.0	145307	6117.	50.53	0.0	347.8	0.0	1.831	248.	165.	63.	69.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		2.0	73.3	0.0	5.913	0.0	0.0	0.0	0.0	145519	6117.	50.90	0.0	349.1	0.0	1.838	248.	165.	61.	69.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		3.0	73.3	0.0	5.912	0.0	0.0	0.0	0.0	145582	6115.	51.02	0.0	350.4	0.0	1.845	248.	165.	60.	69.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		4.0	73.2	0.0	5.913	0.0	0.0	0.0	0.0	145626	6107.	51.15	0.0	351.3	0.0	1.852	248.	165.	60.	69.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		5.0	73.2	0.0	5.910	0.0	0.0	0.0	0.0	145656	6106.	51.26	0.0	351.9	0.0	1.856	248.	165.	60.	69.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		10.0	73.2	0.0	5.909	0.0	0.0	0.0	0.0	145724	6098.	51.37	0.0	352.5	0.0	1.862	248.	165.	59.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		15.0	73.2	0.0	5.905	0.0	0.0	0.0	0.0	145915	6094.	51.32	0.0	352.0	0.0	1.860	248.	165.	58.	67.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		20.0	73.1	0.0	5.901	0.0	0.0	0.0	0.0	145867	6086.	51.06	0.0	350.0	0.0	1.852	248.	165.	58.	67.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		29.4	73.2	0.0	5.899	0.0	0.0	0.0	0.0	145915	6089.	50.60	0.0	346.8	0.0	1.834	248.	165.	58.	66.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4389	30.0	1.0	73.5	0.0	4.911	0.0	0.0	0.0	0.0	139349	6403.	50.46	0.0	362.1	0.0	1.821	230.	184.	62.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		2.0	73.5	0.0	4.912	0.0	0.0	0.0	0.0	139558	6396.	50.66	0.0	363.0	0.0	1.828	230.	184.	60.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		3.0	73.4	0.0	4.912	0.0	0.0	0.0	0.0	139613	6388.	50.78	0.0	363.7	0.0	1.833	230.	184.	60.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		4.0	73.4	0.0	4.912	0.0	0.0	0.0	0.0	139647	6383.	50.88	0.0	364.4	0.0	1.838	230.	184.	59.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		5.0	73.4	0.0	4.912	0.0	0.0	0.0	0.0	139666	6386.	50.98	0.0	365.0	0.0	1.841	230.	184.	59.	68.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		10.0	73.3	0.0	4.907	0.0	0.0	0.0	0.0	139759	6370.	51.05	0.0	365.3	0.0	1.846	230.	184.	58.	67.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		15.0	73.1	0.0	4.904	0.0	0.0	0.0	0.0	139883	6350.	50.92	0.0	364.0	0.0	1.846	230.	184.	58.	67.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		20.0	73.1	0.0	4.902	0.0	0.0	0.0	0.0	139914	6350.	50.73	0.0	362.6	0.0	1.839	230.	184.	58.	66.	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		29.4	73.2	0.0	4.902	0.0	0.0	0.0	0.0	139962	6356.	50.24	0.0	359.0	0.0	1.819	230.	184.	57.	66.	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.43	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1405	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/17/86
LENGTH OF RUN	5.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR.	60/60	MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4378
OXID SP.GR.	60/60	MMH	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE	0.0	N204	DSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	4.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	78.4	86.7	108.2	129.0	141.3	143.0
63. FUEL CAVITY TEMP.	FLT	DEG. FAHR	60.1	60.8	60.9	61.8	61.9	61.9
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	69.9	180.3	235.8	261.6	277.4	283.6
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	78.5	78.3	78.7	78.7	79.0	78.8
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	67.2	67.6	67.2	67.5	67.3	67.9
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	67.1	76.0	99.0	126.4	155.4	171.1
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	65.9	71.1	91.8	117.3	144.0	158.0
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	63.3	74.3	99.4	126.3	152.0	165.9
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	64.0	70.5	89.3	113.5	140.2	153.7
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	71.2	71.3	71.5	71.7	71.9	72.0
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	65.5	66.1	66.3	66.9	67.7	68.5
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	68.5	106.5	310.0	499.7	670.5	744.9
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	68.1	101.4	261.6	428.6	572.9	636.0
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	66.5	67.0	68.3	70.6	71.3	71.8
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	69.4	91.7	204.8	327.1	424.3	464.8
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	70.9	70.9	70.9	71.4	72.4	73.5
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	69.7	70.7	70.7	70.9	71.4	72.4
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	70.0	70.5	70.6	70.7	70.8	70.9
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	69.7	69.4	69.3	69.6	70.9	71.8
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	67.2	77.5	106.3	136.8	165.4	180.3
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	67.5	73.3	91.9	116.8	145.3	158.7
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	68.7	106.8	279.2	464.5	631.3	706.0
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	68.7	113.5	301.7	485.3	639.1	707.3

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BELL AERCSpace TEXTRON

PAGE 0F

PT16 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

BAROMETRIC PRESSURE	14.43 PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1407 HRS	T/C	AE 15.1360	IN2	TEST DATE	04/17/86
LENGTH OF RUN	30.0 SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0 MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4379
OXID SP.GR. 60/60	0.0 N2O4	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE		OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE					F/OX VAL S/N	/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	86.6	213.5	264.0
63. FUEL CAVITY TEMP.	FCT	DEG.FAHR	69.4	75.1	80.2
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	196.1	443.8	448.7
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	78.9	80.3	80.9
66.			0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	249.9	464.9	672.0
68. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	255.9	872.5	1056.7
69. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	229.7	751.2	910.1
70. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	221.5	842.8	967.3
71. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	199.1	703.4	815.2
72. LOAD CELL TEMPERATURE	LCT	DEG.FAHR	72.9	77.0	80.5
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	192.8	148.0	164.5
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	425.8	1719.2	1770.2
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	398.6	1438.1	1492.9
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	71.0	84.5	85.6
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	293.7	1003.8	1052.7
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	128.3	142.7	149.6
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	126.9	136.9	144.6
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	112.2	156.9	183.0
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	112.8	175.7	198.5
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	223.5	790.5	1004.6
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	209.6	651.3	760.2
84. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	437.6	1682.7	1731.8
85. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	446.3	1662.2	1707.8

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.43	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	14.09	HR S	FUEL	AE 15.1360	IN2	TEST DATE	04/17/86
LENGTH OF RUN	30.0	SEC	OXID	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0	NNH	FSG	NOM 0.0	LBS/SEC	TEST NU	4380
OXID SP.GR. 60/60	0.0	N204	OSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE						INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	124.5	130.7	143.1	148.8	157.9	165.0	182.8	201.1
63. FUEL CAVITY TEMP	FCT	DEG.FAHR	117.5	119.1	119.5	119.7	121.1	121.3	122.1	124.6
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	348.4	351.1	380.1	391.8	398.8	403.1	412.2	411.9
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	80.9	80.9	81.0	81.0	80.9	81.1	81.3	81.5
66. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	770.1	765.7	762.9	760.9	758.7	758.0	775.6	817.3
67. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	740.7	738.4	747.8	764.4	785.6	809.2	927.8	1023.7
68. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	673.2	671.1	679.0	693.5	711.7	731.7	834.0	915.4
69. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	558.2	550.7	551.5	562.7	581.9	606.9	747.6	856.8
70. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	511.1	507.0	507.2	514.7	528.8	548.4	658.7	742.6
71. SKIN TEMP. NO. 8	SKNT8	DEG.FAHR	479.9	479.9	479.9	479.9	479.9	479.9	479.9	479.9
72. LOAD CELL TEMPERATURE	LCT	DEG.FAHR	416.9	406.8	393.0	379.5	367.0	354.8	305.5	272.5
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	955.6	941.3	1103.6	1204.2	1284.6	1352.9	1554.5	1626.6
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	913.1	935.3	1012.3	1085.3	1145.2	1194.0	1340.3	1396.9
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	84.3	84.4	84.5	85.3	86.5	86.7	88.9	90.6
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	695.3	709.1	765.5	818.6	859.4	890.6	973.8	1005.3
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	258.2	259.3	256.9	251.7	245.4	238.6	209.2	189.9
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	264.3	265.4	263.6	258.2	251.6	244.9	216.3	197.4
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	267.7	268.8	269.2	269.3	269.7	270.3	274.7	279.8
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	250.8	251.9	252.8	253.8	255.3	256.7	261.5	263.2
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	816.5	822.8	844.7	866.6	887.8	908.9	1006.1	1092.3
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	735.1	737.1	746.3	755.7	764.6	773.0	809.9	841.0
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	991.9	1023.4	1118.6	1205.4	1277.0	1340.8	1535.4	1607.0
84. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	999.6	1033.0	1122.9	1201.9	1267.1	1325.8	1511.1	1585.0
85. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR								

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PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

MODEL 8911

P716 REV.01/08/86

BAROMETRIC PRESSURE 14.43 PSIA  
 TIME OF RUN 14:09 HRS  
 LENGTH OF RUN 30.0 SEC  
 FUEL SP.GR. 60/60 0.0 MMH  
 OXID SP.GR. 60/60 0.0 N2O4  
 FUEL TRIM ORIFICE  
 OXID TRIM ORIFICE

T/C AT 0.37720 IN2  
 T/C AE 15.1360 IN2  
 FUEL NOM 0.0 LBS/SEC  
 OXID NOM 0.0 LBS/SEC  
 FSG NOM 0.0  
 OSG NOM 0.0

MODEL NU 8911  
 TEST DATE 04/17/86  
 TEST CELL A-2  
 TEST NU 4380  
 T/C S/N  
 INJ S/N  
 F/OX VAL S/N

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	124.5	214.0	231.7
63. FUEL CAVITY TEMP	FCT	DEG.FAHR	117.5	126.5	131.1
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	348.4	411.5	410.1
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	80.9	81.7	82.0
66.			0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	770.1	866.2	951.6
68. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	740.7	1093.3	1177.7
69. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	673.2	973.6	1044.1
70. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	558.2	921.4	978.4
71. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	511.1	795.6	845.1
72. LOAD CELL TEMPERATURE	LCT	DEG.FAHR	79.9	82.2	84.5
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	416.9	252.7	238.0
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	955.6	1655.7	1671.6
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	913.1	1419.6	1432.3
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	84.3	91.5	93.3
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	695.3	1020.2	1030.7
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	258.2	177.8	169.4
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	264.3	185.0	172.7
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	267.7	284.8	293.4
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	250.8	264.0	264.6
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	816.5	1164.3	1269.1
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	735.1	868.4	911.3
84. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	991.9	1642.3	1654.5
85. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	999.6	1612.4	1626.7

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BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P715 REV.01/08/86

BAROMETRIC PRESSURE	14.43	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1410	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/17/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60	MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4381
OXID SP. GR.	60/60	N2O4	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE	0.0		OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE			F/OX VAL S/N				

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	120.3	127.4	141.6	151.4	162.1	168.7	180.8	188.9
63. FUEL CAVITY TEMP	FCT	DEG. FAHR	157.9	158.4	158.9	159.2	159.9	159.3	160.9	162.3
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	385.3	349.1	367.1	372.6	374.2	376.0	374.6	372.0
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	82.0	81.9	81.9	82.1	82.1	82.2	82.2	82.2
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	862.8	857.1	854.0	850.6	848.4	846.8	857.3	887.1
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	799.5	796.3	805.6	821.4	841.0	862.1	963.4	1040.0
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	739.3	735.6	743.6	757.3	774.8	793.8	883.7	950.2
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	579.5	572.6	574.0	585.5	604.6	628.6	752.7	841.1
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	536.9	531.7	531.9	539.7	555.0	574.3	676.0	747.7
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	81.4	81.4	81.4	81.4	81.5	81.5	81.8	82.3
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	435.8	426.8	413.5	399.9	387.3	375.4	325.5	291.7
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	967.5	995.6	1098.0	1189.1	1258.9	1314.3	1469.1	1517.1
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	933.1	951.5	1024.9	1094.0	1147.4	1189.3	1305.1	1344.2
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	93.0	93.2	94.1	94.8	95.3	95.8	97.6	98.5
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	745.6	756.5	806.2	852.2	885.0	909.0	965.5	984.4
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	307.1	308.4	305.1	297.5	288.0	278.5	236.8	208.1
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	319.9	321.4	318.5	311.1	302.2	293.0	253.2	223.8
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	353.2	354.2	354.4	354.3	354.1	354.0	352.5	350.5
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	314.5	315.9	316.3	316.6	317.0	317.3	316.7	312.3
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	929.9	932.2	948.9	965.5	963.8	975.6	1070.3	1131.4
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	834.1	834.2	841.9	850.4	858.8	866.5	897.6	920.5
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	1010.1	1035.1	1120.5	1198.6	1262.2	1316.2	1472.8	1526.7
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	1024.5	1050.8	1130.2	1200.2	1256.3	1303.4	1446.9	1494.6
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR								



## BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.43 PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1410 HRS	T/C	AE 15.1360	IN2	TEST DATE	04/17/86
LENGTH OF RUN	30.0 SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0 MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4381
OXID SP.GR. 60/60	0.0 N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE		OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE					F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	120.3	201.3	210.8
63. FUEL CAVITY TEMP.	FCT	DEG.FAHR	157.9	162.6	164.9
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	385.3	367.7	365.7
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	82.0	82.5	82.5
66.			0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	862.8	921.7	980.2
68. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	799.5	1091.5	1150.7
69. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	739.3	996.1	1050.8
70. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	579.5	888.8	927.7
71. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	536.9	790.1	828.3
72. LOAD CELL TEMPERATURE	LCT	DEG.FAHR	81.4	83.2	84.3
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	435.8	271.2	253.4
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	967.5	1529.6	1534.2
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	933.1	1358.0	1360.7
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	93.0	99.0	99.4
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	745.6	990.9	991.8
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	307.1	189.4	169.4
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	319.9	203.0	178.8
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	353.2	348.3	344.2
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	314.5	307.1	297.9
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	929.9	1141.8	1208.5
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	834.1	938.7	964.6
84. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	1010.1	1545.9	1547.6
85. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	1024.5	1513.3	1522.1

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BELL AEROSPACE TEXTRON

PAGE 01

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PT16 REV.01/08/86

BAROMETRIC PRESSURE	14.43	PSIA	T/C	AT 0.37720	IN2	MODEL NU	8911
TIME OF RUN	1410	HR S	T/C	AE 15.1360	IN2	TEST DATE	04/11/86
LENGTH OF RUN	5.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NU	4382
OXID SP. GR. 60/60	0.0	N2O4	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			DSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/U X VAL S/N	

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	4.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	177.1	178.4	188.9	195.6	200.6	202.9
63. FUEL CAVITY TEMP	FCT	DEG.FAHR	168.3	169.1	169.6	170.0	170.5	170.8
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	463.8	350.8	361.2	365.1	366.2	366.3
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	82.5	82.6	82.8	82.6	82.7	82.8
66. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	1010.9	1010.0	1008.7	1007.7	1006.5	1006.2
67. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	1085.4	1071.7	1074.2	1080.4	1087.9	1091.0
68. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	991.0	978.4	980.7	986.8	994.3	997.4
69. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	898.3	872.4	860.4	855.7	857.0	858.4
70. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	801.8	782.9	773.8	770.6	771.2	772.1
72. LOAD CELL TEMPERATURE	LCT	DEG.FAHR	84.9	84.9	84.9	85.0	85.0	84.9
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	306.3	315.1	313.0	310.5	307.8	306.8
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	1421.3	1410.8	1432.4	1453.1	1471.0	1476.7
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	1283.2	1274.4	1287.9	1300.7	1311.2	1315.0
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	99.2	99.3	99.6	99.9	100.3	100.5
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	936.0	930.7	944.0	957.3	966.6	969.5
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	183.4	190.8	193.3	193.6	192.2	191.7
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	191.1	198.5	201.2	201.3	200.0	199.2
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	345.1	346.0	346.4	346.2	346.1	346.1
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	298.8	300.1	300.3	300.4	300.4	300.5
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	1212.1	1205.9	1211.8	1217.2	1222.7	1225.3
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	960.2	958.8	962.4	965.9	969.4	970.9
84. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	1437.3	1426.3	1445.5	1464.7	1480.0	1486.1
85. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	1424.1	1415.2	1432.7	1448.4	1463.5	1468.4

BELL AEROSPACE TESTKON

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P716 REV.01/08/86 MODEL 9911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PARAMETER		S	YMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
EXTRA PARAMETERS												
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	92.0	99.2	111.6	121.7	129.7	136.1	152.6	166.0		
63. FUEL CAVITY TEMP	FCI	DEG. FAHR	182.4	183.0	183.1	183.0	183.0	182.3	180.2	179.7		
64. NOZZLE LAND TEMP.	NLI	DEG. FAHR	418.5	349.2	350.9	347.5	344.1	341.3	332.7	327.3		
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	82.9	83.0	82.9	82.8	82.9	83.2	83.1	83.3		
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	669.8	666.8	664.6	663.0	661.8	662.0	685.9	735.8		
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	570.0	572.0	586.4	608.5	635.1	663.6	799.6	900.9		
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	549.3	550.1	562.9	583.3	608.0	634.6	762.3	856.5		
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	390.6	391.6	402.4	423.3	451.9	485.1	646.4	753.0		
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	376.0	376.0	383.9	401.5	426.9	456.8	606.5	702.1		
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	78.1	78.1	78.0	78.0	78.0	78.1	78.8	79.7		
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	339.4	334.3	325.6	317.3	309.3	301.7	270.8	252.8		
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	662.7	708.3	853.5	980.2	1078.1	1151.7	1330.6	1382.4		
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	660.7	699.6	821.4	930.5	1015.8	1082.6	1241.0	1286.7		
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	98.1	98.6	101.1	102.1	102.5	102.9	106.3	107.0		
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	610.5	632.3	709.5	774.4	819.9	852.4	923.2	941.9		
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	392.9	393.1	385.9	372.7	357.8	342.7	279.6	235.6		
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	402.9	403.3	397.2	385.6	372.9	360.2	301.1	256.4		
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	406.5	407.0	407.2	407.3	407.2	407.1	403.7	397.1		
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	389.6	389.7	385.7	389.5	388.9	388.3	381.9	371.5		
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	659.9	684.0	703.0	721.1	742.7	754.5	811.5			
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	693.8	695.1	706.0	718.3	730.4	741.3	783.0	815.3		
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	712.3	755.8	888.1	1008.1	1103.3	1177.8	1372.1	1433.0		
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	733.3	778.7	901.3	1009.5	1095.5	1162.3	1339.6	1403.3		

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## BELL AEROSPACE TETRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.43	PSIA	T/C	AT 0.37720	IN2	MODEL NU	8911
TIME OF RUN	1413	HR S	T/C	AE 15.1360	IN2	TEST DATE	04/17/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60	MMH	OXID	NOM 0.0	LBS/SEC	TEST NU	4383
OXID SP. GR.	60/60	N204	FSG	NOM 0.0		I/C S/N	
FUEL TRIM ORIFICE	0.0		DSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	92.0	176.2	197.8
63. FUEL CAVITY TEMP.	FCI	DEG. FAHR	182.4	179.1	179.0
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	418.5	322.9	318.0
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	82.9	83.3	83.5
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	669.8	792.6	884.2
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	570.0	969.2	1046.5
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	549.3	920.7	989.7
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	390.6	809.8	854.3
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	376.0	756.8	801.9
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	78.1	80.7	82.0
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	339.4	245.2	244.8
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	662.7	1391.0	1394.3
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	660.7	1294.3	1292.6
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	98.1	107.4	106.9
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	610.5	944.4	942.6
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	392.9	205.7	174.0
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	402.9	223.5	185.1
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	406.5	390.0	377.5
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	389.6	360.5	340.7
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	659.9	859.0	947.5
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	693.8	845.8	899.2
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	712.3	1447.4	1450.7
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	733.3	1419.7	1420.2
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR			

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## BELL AEROSPACE TEXTRON

PAGE UF

MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PT16 REV.01/08/86

BAROMETRIC PRESSURE	14.43 PSIA	T/C	AT 0.37720 IN2	MODEL NO	8911
TIME OF RUN	1415 HRS	T/C	AE 15.1360 IN2	TEST DATE	04/17/86
LENGTH OF RUN	30.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0 MMH	OXID	NOM 0.0 LBS/SEC	TEST NO	4384
OXID SP.GR. 60/60	0.0 N204	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE		DSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/U VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE					
63. FUEL CAVITY TEMP	TAMB	DEG.FAHR	107.4	190.9	207.4
64. NOZZLE LAND TEMP.	FCT	DEG.FAHR	188.4	189.7	190.7
65. TUB WALL TEMPERATURE	NLT	DEG.FAHR	364.9	263.0	259.9
66. SKIN TEMP. NO. 3	TWT	DEG.FAHR	83.7	84.0	84.2
67. SKIN TEMP. NO. 4			0.0	0.0	0.0
68. SKIN TEMP. NO. 5	SKNT3	DEG.FAHR	788.5	860.0	917.2
69. SKIN TEMP. NO. 6	SKNT4	DEG.FAHR	692.4	977.8	1025.7
70. SKIN TEMP. NO. 7	SKNT5	DEG.FAHR	663.8	946.3	991.3
71. SKIN TEMP. NO. 8	SKNT6	DEG.FAHR	494.8	792.8	817.9
72. LOAD CELL TEMPERATURE	SKNT7	DEG.FAHR	474.9	767.6	793.9
73. SKIN TEMP. NO. 9	LCT	DEG.FAHR	80.2	82.8	84.3
74. SKIN TEMP. NO. 10	SKNT9	DEG.FAHR	413.0	273.0	261.3
75. SKIN TEMP. NO. 11	SKNT10	DEG.FAHR	834.9	1276.2	1276.9
76. SKIN TEMP. NO. 12	SKNT11	DEG.FAHR	830.8	1222.0	1218.6
77. SKIN TEMP. NO. 13	SKNT12	DEG.FAHR	105.8	109.5	110.4
78. SKIN TEMP. NO. 14	SKNT13	DEG.FAHR	696.9	887.3	883.0
79. SKIN TEMP. NO. 15	SKNT14	DEG.FAHR	334.2	174.9	154.7
80. SKIN TEMP. NO. 16	SKNT15	DEG.FAHR	336.0	190.0	163.7
81. SKIN TEMP. NO. 17	SKNT16	DEG.FAHR	383.0	361.5	345.6
82. SKIN TEMP. NO. 18	SKNT17	DEG.FAHR	369.3	333.8	312.9
83. SKIN TEMP. NO. 19	SKNT18	DEG.FAHR	689.6	817.7	849.6
84. SKIN TEMP. NO. 20A	SKNT19	DEG.FAHR	783.1	878.2	911.9
85. SKIN TEMP. NO. 21A	SKNT20A	DEG.FAHR	890.9	1353.6	1352.9
	SKNT21A	DEG.FAHR	909.1	1306.6	1306.2

BELL AEROSPACE TEXTRON

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BAROMETRIC PRESSURE	14.43	PSIA	T/C	AT 0.37720	IN2	MODEL NU	8911			
TIME OF RUN	1417	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/17/86			
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2			
FUEL SP.GR. 60/60	0.0	MMH	OXID	NOM 0.0	LBS/SEC	TEST NU	4385			
OXID SP.GR. 60/60	0.0	N204	FSG	NOM 0.0		T/C S/N				
FUEL TRIM OFFICE			DSG	NOM 0.0		INJ S/N				
OXID TRIM ORIFICE					F/UJ VAL S/N	/				
EXTRA PARAMETERS										
PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE										
	TAMB	DEG.FAHR	113.6	122.0	136.4	146.0	152.1	156.6	175.2	188.1
63. FUEL CAVITY TEMP										
	FCT	DEG.FAHR	198.2	198.4	198.5	198.4	198.3	198.0	197.6	197.6
64. NOZZLE LAND TEMP.										
	NLT	DEG.FAHR	327.3	237.1	229.9	224.0	220.5	215.6	207.7	203.7
65. TUB WALL TEMPERATURE										
	TWT	DEG.FAHR	84.1	84.2	84.3	84.3	84.3	84.2	84.3	84.4
66.			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	806.2	799.7	795.7	792.4	789.8	788.3	800.4	829.0
68. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	703.5	703.2	716.4	735.0	755.8	777.4	866.2	921.3
69. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	680.5	679.3	692.3	711.3	733.1	755.0	847.9	903.1
70. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	502.4	500.8	512.2	533.7	559.3	585.6	695.2	749.3
71. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	486.0	483.6	493.2	513.3	538.4	565.6	674.8	729.0
72. LOAD CELL TEMPERATURE										
	LCT	DEG.FAHR	82.0	82.1	81.9	81.8	82.0	81.9	82.5	83.5
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	414.0	405.9	393.7	381.4	369.7	358.3	313.1	284.8
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	834.8	862.0	945.1	1012.1	1057.7	1093.1	1162.4	1174.5
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	836.0	859.2	932.9	993.6	1034.7	1087.6	1129.1	1139.4
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	108.1	108.3	109.3	110.1	110.1	110.3	110.7	111.5
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	679.2	688.8	728.7	761.2	780.3	794.1	815.0	816.5
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	292.5	294.0	288.4	277.8	265.5	253.1	202.4	170.3
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	290.9	292.9	288.8	280.8	270.9	260.6	214.7	181.0
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	343.9	344.7	345.0	344.5	344.5	343.9	339.9	333.4
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	340.0	340.7	340.0	338.8	337.1	335.4	322.4	306.9
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	667.1	673.0	683.8	691.5	696.6	689.0	709.9	729.7
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	797.8	795.4	798.1	801.8	805.3	808.1	812.7	810.9
84. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	897.6	925.7	956.9	1054.8	1098.3	1128.2	1194.5	1201.9
85. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	912.9	940.1	1001.5	1052.4	1092.2	1120.1	1181.4	1195.6

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## BELL AEROSPACE TEXTRON

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P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

BAROMETRIC PRESSURE	14.43 PSIA	T/C	AT 0.37720 IN2	MODEL NO	8911
TIME OF RUN	1417 HRS	T/C	AE 15.1360 IN2	TEST DATE	04/11/86
LENGTH OF RUN	30.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0 MMH	OXID	NOM 0.0 LBS/SEC	TEST NO	4385
OXID SP.GR. 60/60	0.0 N204	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE		OSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	113.6	196.9	209.2
63. FUEL CAVITY TEMP	FCT	DEG.FAHR	198.2	197.8	198.6
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	327.3	201.2	199.5
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	84.1	84.7	84.8
			0.0	0.0	0.0
66. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	806.2	858.2	901.1
67. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	703.5	954.9	984.5
68. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	680.5	934.1	969.6
69. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	502.4	770.9	786.9
70. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	486.0	751.6	771.0
71. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	486.0	751.6	771.0
72. LOAD CELL TEMPERATURE	LCT	DEG.FAHR	82.0	84.7	86.2
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	414.0	268.9	255.5
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	834.8	1169.0	1170.3
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	836.0	1133.2	1132.5
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	108.1	111.6	112.9
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	679.2	812.1	809.5
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	292.5	152.3	136.0
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	290.9	161.8	142.9
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	343.9	325.9	311.2
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	340.0	291.8	268.7
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	667.1	750.7	784.5
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	797.8	807.8	802.4
84. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	897.6	1206.4	1205.6
85. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	912.9	1205.8	1203.7



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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.43 PSIA	T/C	AT 0.37720 IN2	MODEL NO	8911
TIME OF RUN	1420 HRS	T/C	AE 15.1360 IN2	TEST DATE	04/11/86
LENGTH OF RUN	30.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0 MMH	OXID	NOM 0.0 LBS/SEC	TEST NO	4386
OXID SP. GR. 60/60	0.0 N204	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE		DSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	91.3	95.6	103.7	110.8	118.2	125.6	150.1	173.4
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	195.2	195.3	195.4	195.3	195.2	195.4	197.0	196.9
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	327.3	365.8	404.2	422.6	434.5	442.4	460.4	464.9
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	84.9	85.0	85.1	84.9	85.0	85.0	85.2	85.3
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	585.0	583.2	582.0	580.9	580.5	581.1	608.5	671.5
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	484.7	486.6	498.7	519.2	546.0	577.2	749.0	900.2
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	471.8	472.0	481.4	498.6	521.2	547.3	691.9	817.3
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	328.5	328.6	336.4	359.1	384.3	420.9	632.3	803.0
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	320.5	320.4	326.7	340.6	363.1	392.0	559.9	694.5
71. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	80.0	80.0	80.1	80.1	80.2	80.2	81.0	81.9
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	306.4	302.1	295.3	288.9	282.9	277.2	255.7	246.1
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	543.3	602.4	787.7	969.1	1122.5	1241.9	1601.8	1733.6
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	553.2	597.7	736.8	873.3	989.8	1087.0	1361.9	1477.1
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	107.9	108.3	110.0	112.1	113.9	115.4	119.6	121.7
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	506.9	533.7	628.4	719.0	790.4	846.4	999.7	1064.2
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	329.4	329.2	324.4	315.0	304.3	293.7	250.1	223.8
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	328.9	328.9	325.1	317.5	308.9	300.0	262.7	236.3
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	330.5	330.8	331.2	331.3	331.0	330.9	332.3	335.8
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	325.3	325.8	325.4	324.5	324.1	323.8	323.7	324.1
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	485.1	494.5	517.7	541.4	566.4	599.8	811.3	931.0
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	571.3	575.7	590.5	605.4	620.2	635.0	704.9	767.7
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	598.8	651.5	812.0	569.9	1106.9	1216.9	1557.1	1683.4
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	624.2	681.6	834.2	578.9	1103.3	1205.7	1521.9	1654.1

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BAROMETRIC PRESSURE	14.43	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1420	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/17/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0	MMH	OXID	NOM 0.0	LRS/SEC	TEST NO	4386
OXID SP.GR. 60/60	0.0	N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM CRIFICE			OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/UX VAL S/N	/
EXTRA PARAMETERS							
PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4		
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	91.3	193.8	228.3		
63. FUEL CAVITY TEMP	FCT	DEG.FAHR	195.2	197.1	198.9		
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	327.3	464.7	465.1		
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	84.9	85.3	85.6		
66. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	585.0	749.6	893.2		
67. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	484.7	1014.3	1158.4		
68. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	471.8	912.1	1032.6		
69. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	328.5	913.9	1014.5		
70. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	320.5	784.7	873.3		
71. LOAD CELL TEMPERATURE	LCT	DEG.FAHR	80.0	82.9	86.0		
72. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	306.4	246.4	261.5		
73. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	543.3	1782.8	1814.3		
74. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	553.2	1522.5	1553.8		
75. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	107.9	123.3	124.0		
76. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	506.9	1094.3	1120.0		
77. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	329.4	207.9	192.4		
78. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	328.9	217.9	198.0		
79. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	330.5	339.6	346.2		
80. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	325.3	324.3	322.9		
81. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	485.1	1038.6	1201.6		
82. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	571.3	823.0	910.3		
83. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	598.8	1734.6	1767.3		
84. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	624.2	1703.4	1744.3		

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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BAROMETRIC PRESSURE	14.43	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1422	HRS	T/C	AE 15.1360	IN2	TEST DATE	04/17/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR. 60/60	0.0	M/H	OXID	NOM 0.0	LBS/SEC	TEST NO	4387
XID SP. GR. 60/60	0.0	N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			OSG	NOM 0.0		INJ S/N	
XID TRIM ORIFICE						F/UX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
2. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	132.0	134.8	142.2	148.0	154.4	160.7	179.6	188.0
3. FUEL CAVITY TEMP	FCT	DEG. FAHR	216.7	218.1	218.1	218.6	218.8	219.0	220.3	221.3
4. NOZZLE LAND TEMP.	NLT	DEG. FAHR	417.4	392.9	416.7	426.4	430.1	431.3	434.6	432.5
5. TUB WALL TEMPERATURE	TWT	DEG. FAHR	85.6	85.7	85.7	85.9	86.0	86.0	85.9	86.0
6. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	921.5	916.2	912.9	910.5	908.3	907.5	920.4	951.9
7. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	868.2	864.0	872.1	887.0	906.1	926.6	1027.9	1105.4
8. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	806.9	802.2	808.8	821.7	837.8	855.7	943.8	1010.2
9. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	650.1	640.0	638.9	647.8	665.0	687.5	813.5	905.2
10. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	601.6	594.0	592.6	599.0	611.7	628.9	725.3	799.0
11. SKIN TEMP. NO. 8	LCT	DEG. FAHR	86.1	86.1	86.1	86.0	86.1	86.1	86.9	87.3
12. LOAD CELL TEMPERATURE	SKNT9	DEG. FAHR	488.1	479.4	466.1	453.1	440.9	429.2	381.9	350.6
13. SKIN TEMP. NO. 9	SKNT10	DEG. FAHR	1102.5	1132.3	1225.1	1315.7	1389.1	1450.2	1615.0	1671.3
14. SKIN TEMP. NO. 10	SKNT11	DEG. FAHR	1060.2	1077.9	1146.5	1206.1	1254.2	1295.6	1417.6	1460.6
15. SKIN TEMP. NO. 11	SKNT12	DEG. FAHR	119.5	119.5	120.5	121.5	122.0	123.6	126.0	126.7
16. SKIN TEMP. NO. 12	SKNT13	DEG. FAHR	843.3	853.1	899.0	939.6	969.4	992.3	1050.6	1070.3
17. SKIN TEMP. NO. 13	SKNT14	DEG. FAHR	338.3	340.2	336.3	328.1	318.0	307.8	263.6	232.8
18. SKIN TEMP. NO. 14	SKNT15	DEG. FAHR	339.4	341.6	338.6	331.4	322.6	313.7	274.8	246.0
19. SKIN TEMP. NO. 15	SKNT16	DEG. FAHR	386.2	387.4	387.6	387.7	387.5	387.5	386.4	385.2
20. SKIN TEMP. NO. 16	SKNT17	DEG. FAHR	358.8	360.1	360.7	360.8	360.9	361.0	358.1	352.0
21. SKIN TEMP. NO. 17	SKNT18	DEG. FAHR	964.5	968.1	988.3	1006.9	1026.0	1044.2	1127.6	1197.0
22. SKIN TEMP. NO. 18	SKNT19	DEG. FAHR	866.5	867.9	877.4	886.6	895.9	904.1	939.4	964.8
23. SKIN TEMP. NO. 19	SKNT20A	DEG. FAHR	1138.3	1164.1	1246.0	1319.7	1382.4	1437.6	1597.7	1652.6
24. SKIN TEMP. NO. 20A	SKNT21A	DEG. FAHR	1146.3	1173.2	1249.8	1319.5	1377.6	1425.6	1570.8	1623.7
25. SKIN TEMP. NO. 21A										

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BAROMETRIC PRESSURE	14.43 PSIA	T/C	AT 0.37720 IN2	MODEL NU	8911
TIME OF RUN	1422 HRS	T/C	AE 15.1360 IN2	TEST DATE	04/17/86
LENGTH OF RUN	30.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0 MMH	OXID	NOM 0.0 LBS/SEC	TEST NU	4387
OXID SP.GR. 60/60	0.0 N204	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE		DSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/OX VAL S/N	/
EXTRA PARAMETERS					
PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	132.0	198.9	218.2
63. FUEL CAVITY TEMP	FCI	DEG.FAHR	216.7	222.7	225.4
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	417.4	430.1	427.8
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	85.6	86.1	86.1
66.			0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	921.5	988.1	1048.4
68. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	868.2	1160.6	1224.0
69. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	806.9	1037.6	1107.3
70. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	650.1	958.5	1003.1
71. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	601.6	845.5	883.9
72. LOAD CELL TEMPERATURE	LCT	DEG.FAHR	86.1	88.1	89.7
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	488.1	331.7	315.7
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	1102.5	1694.0	1703.9
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	1060.2	1477.6	1482.7
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	119.5	128.1	128.6
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	843.3	1078.3	1081.4
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	338.3	212.0	189.8
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	339.4	224.9	200.7
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	386.2	383.4	380.7
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	358.8	345.1	333.9
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	964.5	1254.4	1340.6
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	866.5	985.6	1016.0
84. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	1138.3	1675.8	1688.0
85. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	1146.3	1644.0	1656.3

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# BELL AERCSpace TEXTRON

P716 REV.01/08/86 MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

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BAROMETRIC PRESSURE 14.43 PSIA T/C AT 0.37720 IN2 MODEL NO 8911  
 TIME OF RUN 1424 HRS T/C AE 15.1360 IN2 TEST DATE 04/17/86  
 LENGTH OF RUN 30.0 SEC FUEL NOM 0.0 LBS/SEC TEST CELL A-2  
 FUEL SP.GR. 60/60 0.0 MMH OXID NOM 0.0 LBS/SEC TEST NO 4388  
 OXID SP.GR. 60/60 0.0 N2O4 FSG NOM 0.0 T/C S/N  
 FUEL TRIM ORIFICE DSG NOM 0.0 INJ S/N  
 OXID TRIM ORIFICE F/OX VAL S/N /

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE										
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	136.2	141.0	148.4	154.6	159.4	163.7	174.1	185.9
63. FUEL CAVITY TEMP.										
63. FUEL CAVITY TEMP.	FCT	DEG.FAHR	238.5	239.2	239.6	240.0	240.2	240.5	241.6	242.5
64. NOZZLE LAND TEMPERATURE										
64. NOZZLE LAND TEMPERATURE	NLT	DEG.FAHR	407.7	365.5	381.7	386.4	387.3	388.3	385.2	381.6
65. TUB WALL TEMPERATURE										
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	86.1	86.1	86.1	86.1	86.1	86.1	86.1	86.2
66. SKIN TEMP. NO. 3										
66. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	986.3	979.8	975.9	972.1	969.2	967.1	972.7	992.3
67. SKIN TEMP. NO. 4										
67. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	922.4	917.3	924.2	937.6	953.7	971.3	1051.7	1109.4
68. SKIN TEMP. NO. 5										
68. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	853.7	848.7	854.9	866.8	881.3	897.1	969.0	1021.5
69. SKIN TEMP. NO. 6										
69. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	682.2	671.7	669.8	677.7	692.7	711.3	813.8	882.5
70. SKIN TEMP. NO. 7										
70. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	630.6	622.9	619.7	624.5	636.2	651.8	733.0	789.8
71. SKIN TEMP. NO. 8										
71. SKIN TEMP. NO. 8	LCT	DEG.FAHR	88.7	88.3	88.2	88.4	88.1	88.0	88.7	89.3
72. SKIN TEMP. NO. 9										
72. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	497.0	489.3	476.5	464.0	452.0	440.5	392.8	360.4
73. SKIN TEMP. NO. 10										
73. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	1133.4	1151.3	1227.9	1295.4	1350.4	1394.9	1513.8	1550.9
74. SKIN TEMP. NO. 11										
74. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	1087.9	1098.1	1152.6	1201.5	1242.2	1272.4	1356.9	1383.2
75. SKIN TEMP. NO. 12										
75. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	134.6	134.1	135.1	136.4	136.7	136.9	139.1	140.8
76. SKIN TEMP. NO. 13										
76. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	870.8	875.0	909.0	940.4	963.8	979.5	1012.3	1021.2
77. SKIN TEMP. NO. 14										
77. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	325.3	327.9	324.7	317.0	307.8	298.0	254.5	223.5
78. SKIN TEMP. NO. 15										
78. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	332.2	335.5	332.9	325.9	316.9	308.1	268.3	237.9
79. SKIN TEMP. NO. 16										
79. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	409.7	410.7	411.2	410.7	410.3	409.7	405.5	400.3
80. SKIN TEMP. NO. 17										
80. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	362.1	363.5	363.8	363.8	363.7	363.7	359.8	352.3
81. SKIN TEMP. NO. 18										
81. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	1051.8	1051.0	1065.5	1079.1	1092.4	1105.6	1163.4	1211.5
82. SKIN TEMP. NO. 19										
82. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	926.8	925.6	931.5	937.9	944.1	949.4	971.0	985.7
83. SKIN TEMP. NO. 20A										
83. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	1171.7	1187.9	1252.9	1311.2	1361.8	1403.2	1515.2	1557.8
84. SKIN TEMP. NO. 21A										
84. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	1177.0	1194.4	1255.8	1310.6	1354.6	1389.6	1497.2	1531.5

## BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PT16 REV.01/08/86

BAROMETRIC PRESSURE	14.43 PSIA	T/C	AT 0.37720 IN2	MODEL NO	8911
TIME OF RUN	1424 HRS	T/C	AE 15.1360 IN2	TEST DATE	04/17/86
LENGTH OF RUN	30.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60	OXID	NOM 0.0 LBS/SEC	TEST NO	4388
OXID SP. GR.	60/60	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE	0.0	OSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	136.2	198.3	211.8
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	238.5	243.4	244.7
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	407.7	378.8	375.4
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	86.1	86.4	86.8
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	0.0	0.0	0.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	986.3	1014.9	1052.0
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	922.4	1149.6	1188.7
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	853.7	1057.0	1088.0
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	682.2	920.4	947.4
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	630.6	823.4	849.1
72. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	88.7	88.9	90.2
73. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	497.0	339.7	320.2
74. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	1133.4	1559.5	1556.3
75. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	1087.9	1390.5	1387.3
76. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	134.6	142.2	146.4
77. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	870.8	1022.3	1018.4
78. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	325.3	202.5	179.6
79. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	332.2	215.8	189.6
80. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	409.7	394.8	385.9
81. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	362.1	343.7	329.3
82. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	1051.8	1251.8	1311.5
83. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	926.8	995.0	1005.3
84. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	1171.7	1569.0	1566.8
85. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	1177.0	1544.0	1545.3

## BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE		14.43	PSIA	T/C		AT 0.37/20	IN2	MODEL NU		8911															
TIME OF RUN		1425	HRS	T/C		AE 15.1360	IN2	TEST DATE		04/17/86															
LENGTH OF RUN		30.0	SEC	FUEL		NOM 0.0	LBS/SEC	TEST CELL		A-2															
FUEL SP. GR.		60/60	0.0	OXID		NOM 0.0	LBS/SEC	TEST NU		4389															
OXID SP. GR.		60/60	0.0	FSG		NOM 0.0		T/C S/N																	
FUEL TRIM ORIFICE				DSG		NOM 0.0		INJ S/N																	
OXID TRIM ORIFICE								F/OX VAL S/N		/															
EXTRA PARAMETERS																									
PARAMETER		SYMBOL		UNITS		STATIC		1.0		2.0	3.0	4.0	5.0	10.0	15.0										
62. CELL AMBIENT TEMPERATURE																									
TAMB		DEG. FAHR		129.8		133.9		143.1		149.7		158.3		163.7		175.8	185.4								
63. FUEL CAVITY TEMP																									
FCI		DEG. FAHR		251.6		252.3		252.6		252.8		252.9		253.0		253.4		253.8							
64. NOZZLE LAND TEMP.																									
NLT		DEG. FAHR		387.5		331.6		340.0		341.0		339.9		339.5		334.4		329.9							
65. TUB WALL TEMPERATURE																									
TWT		DEG. FAHR		87.0		86.8		87.0		86.9		86.9		86.9		86.9		86.9							
66. SKINT3											0.0		0.0		0.0		0.0		0.0		0.0				
SKINT3		DEG. FAHR		950.1		943.4		939.4		936.1		933.2		931.0		936.1		955.4							
67. SKINT4											869.0		877.1		891.4		908.1		925.2		1002.2	1055.0			
68. SKINT5											814.0		809.6		817.1		830.4		846.4		863.7		938.2	989.3	
69. SKINT6											633.3		624.6		625.9		636.3		653.2		673.9		770.8		829.5
70. SKINT7											591.4		583.9		584.2		592.5		607.1		624.0		711.2		766.9
71. SKINT8											87.9		87.8		87.7		87.8		87.7		87.7		88.0		88.7
72. LOAD CELL TEMPERATURE																									
SKINT9		DEG. FAHR		480.7		473.1		461.2		449.1		437.6		426.6		381.1		350.8							
73. SKINT10											1048.9		1070.0		1144.9		1207.0		1253.2		1289.7		1383.8	1406.1	
74. SKINT11											1016.6		1030.6		1090.2		1140.3		1177.7		1205.9		1280.7		1300.0
75. SKINT12											141.5		141.3		142.3		143.4		144.3		145.6		147.1		146.9
76. SKINT13											825.3		830.9		865.9		895.2		914.5		926.8		954.1		958.1
77. SKINT14											317.5		319.7		316.0		307.6		297.3		286.9		241.7		210.0
78. SKINT15											324.8		327.8		325.0		317.7		309.0		299.7		258.4		226.1
79. SKINT16											405.6		406.5		406.8		406.7		406.1		405.5		400.9		394.2
80. SKINT17											358.8		360.0		360.1		359.9		359.6		359.1		354.0		345.1
81. SKINT18											1005.5		1010.5		1022.6		1034.2		1044.9		1055.1		1100.1		1137.3
82. SKINT19											903.6		902.2		907.7		914.4		920.6		925.9		943.7		951.9
83. SKINT20A											1095.0		1115.0		1181.2		1238.5		1284.6		1323.3		1426.6		1460.0
84. SKINT21A											1106.6		1126.7		1187.0		1235.9		1275.3		1307.7		1399.3		1419.5
85. SKINT21A											1106.6		1126.7		1187.0		1235.9		1275.3		1307.7		1399.3		1419.5

## BELL AEROSPACE TEXTRON

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BAROMETRIC PRESSURE	14.43 PSIA	T/C	AT 0.3720 IN2	MODEL NO	8911
TIME OF RUN	1425 HRS	T/C	AE 15.1360 IN2	TEST DATE	04/17/86
LENGTH OF RUN	30.0 SEC	FUEL NOM	0.0 LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0 MMH	OXID NOM	0.0 LBS/SEC	TEST NO	4389
OXID SP.GR. 60/60	0.0 N204	FSG NOM	0.0	T/C S/N	
FUEL TRIM ORIFICE		OSG NOM	0.0	INJ S/N	
OXID TRIM ORIFICE				F/OX VAL S/N	/
EXTRA PARAMETERS					
PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	129.8	195.2	210.7
63. FUEL CAVITY TEMP	FCT	DEG.FAHR	251.6	253.9	254.1
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	387.5	328.2	324.3
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	87.0	87.0	87.2
66. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	950.1	977.9	1011.3
67. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	873.2	1088.2	1118.0
68. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	814.0	1023.7	1049.5
69. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	633.3	859.0	880.6
70. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	591.4	798.0	820.8
71. SKIN TEMP. NO. 8	LCT	DEG.FAHR	87.9	88.8	90.1
72. LOAD CELL TEMPERATURE	SKNT9	DEG.FAHR	480.7	331.9	314.4
73. SKIN TEMP. NO. 9	SKNT10	DEG.FAHR	1048.9	1408.1	1407.5
74. SKIN TEMP. NO. 10	SKNT11	DEG.FAHR	1016.6	1303.2	1306.6
75. SKIN TEMP. NO. 11	SKNT12	DEG.FAHR	141.5	146.4	145.8
76. SKIN TEMP. NO. 12	SKNT13	DEG.FAHR	825.3	956.6	952.2
77. SKIN TEMP. NO. 13	SKNT14	DEG.FAHR	317.5	188.6	168.9
78. SKIN TEMP. NO. 14	SKNT15	DEG.FAHR	324.8	202.8	175.4
79. SKIN TEMP. NO. 15	SKNT16	DEG.FAHR	405.6	386.4	372.7
80. SKIN TEMP. NO. 16	SKNT17	DEG.FAHR	358.8	335.8	319.0
81. SKIN TEMP. NO. 17	SKNT18	DEG.FAHR	1005.5	1167.8	1212.6
82. SKIN TEMP. NO. 18	SKNT19	DEG.FAHR	903.6	956.7	959.6
83. SKIN TEMP. NO. 19	SKNT20A	DEG.FAHR	1095.0	1465.8	1459.9
84. SKIN TEMP. NO. 20A	SKNT21A	DEG.FAHR	1106.6	1427.3	1426.8
85. SKIN TEMP. NO. 21A					



BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - Q2/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE		14.43	PSIA	T/C		AT 0.37720	IN2	MODEL NO		8911					
TIME OF RUN		1426	HRS	T/C		AE 15.1360	IN2	TEST DATE		04/17/86					
LENGTH OF RUN		30.0	SEC	FUEL		NOM 0.0	LBS/SEC	TEST CELL		A-2					
FUEL SP. GR.		60/60	M4H	OXID		NOM 0.0	LBS/SEC	TEST NO		4390					
OXID SP. GR.		60/60	N2O4	FSG		NOM 0.0		T/C S/N							
FUEL TRIM ORIFICE		0.0		OSG		NOM 0.0		INJ S/N							
OXID TRIM ORIFICE								F/OX VAL S/N		/					
EXTRA PARAMETERS															
PARAMETER		SYMBOL		UNITS		STATIC		1.0		2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE		TAMB		DEG. FAHR		127.3		133.5		146.2	152.5	159.2	165.6	182.8	192.3
63. FUEL CAVITY TEMP		FCT		DEG. FAHR		256.6		256.7		256.9	257.0	257.1	257.1	257.2	257.1
64. NOZZLE LAND TEMP.		NLT		DEG. FAHR		366.1		289.9		291.1	289.1	286.8	286.3	277.1	272.6
65. TUB WALL TEMPERATURE		TWT		DEG. FAHR		87.1		87.1		87.1	87.1	87.2	87.3	87.3	87.4
66. SKIN TEMP. NO. 3		SKNT3		DEG. FAHR		908.3		902.2		897.8	894.3	891.7	889.8	896.3	917.7
67. SKIN TEMP. NO. 4		SKNT4		DEG. FAHR		821.2		817.7		827.0	841.2	858.0	875.0	949.6	997.0
68. SKIN TEMP. NO. 5		SKNT5		DEG. FAHR		776.3		772.7		781.7	797.1	815.2	833.8	913.7	963.8
69. SKIN TEMP. NO. 6		SKNT6		DEG. FAHR		591.8		584.9		588.6	601.5	619.8	641.2	734.8	784.1
70. SKIN TEMP. NO. 7		SKNT7		DEG. FAHR		559.9		554.7		558.3	570.5	589.5	611.4	707.3	759.4
72. LOAD CELL TEMPERATURE		LCT		DEG. FAHR		88.3		88.1		87.9	87.9	87.8	87.8	88.0	88.8
73. SKIN TEMP. NO. 9		SKNT9		DEG. FAHR		462.3		455.2		443.7	432.0	421.0	410.3	367.1	339.0
74. SKIN TEMP. NO. 10		SKNT10		DEG. FAHR		974.5		992.9		1059.2	1116.1	1159.4	1192.4	1260.6	1270.3
75. SKIN TEMP. NO. 11		SKNT11		DEG. FAHR		958.3		974.9		1036.3	1088.7	1130.1	1160.1	1219.9	1224.0
76. SKIN TEMP. NO. 12		SKNT12		DEG. FAHR		141.2		140.4		141.3	142.2	143.3	143.6	145.6	145.6
77. SKIN TEMP. NO. 13		SKNT13		DEG. FAHR		776.7		783.6		817.8	847.2	867.5	881.1	899.5	894.9
78. SKIN TEMP. NO. 14		SKNT14		DEG. FAHR		298.4		301.0		297.0	287.9	277.4	266.6	220.3	189.0
79. SKIN TEMP. NO. 15		SKNT15		DEG. FAHR		304.5		307.3		304.9	297.8	289.1	279.9	237.6	205.7
80. SKIN TEMP. NO. 16		SKNT16		DEG. FAHR		381.3		382.0		382.4	382.3	381.7	381.2	376.5	369.7
81. SKIN TEMP. NO. 17		SKNT17		DEG. FAHR		344.8		345.5		345.5	345.0	344.1	343.1	335.2	324.4
82. SKIN TEMP. NO. 18		SKNT18		DEG. FAHR		932.7		924.0		934.6	944.5	953.8	962.9	1003.5	1037.8
83. SKIN TEMP. NO. 19		SKNT19		DEG. FAHR		866.2		864.1		868.3	873.7	879.0	884.3	902.2	911.3
84. SKIN TEMP. NO. 20A		SKNT20A		DEG. FAHR		1032.2		1053.1		1124.2	1181.8	1227.1	1260.7	1340.8	1360.1
85. SKIN TEMP. NO. 21A		SKNT21A		DEG. FAHR		1045.3		1066.6		1124.4	1171.0	1206.1	1234.5	1301.3	1311.1

# BELL AEROSPACE TEXTRON

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

PT16 REV.01/08/86

BAROMETRIC PRESSURE	14.43	PSIA	T/C	AT 0.37720	IN2	MODEL NO	8911
TIME OF RUN	1426	HR S	T/C	AE 15.1360	IN2	TEST DATE	04/11/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60	MMH	OXID	NOM 0.0	LBS/SEC	TEST NO	4390
OXID SP. GR.	60/60	N2O4	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	127.3	201.2	214.8
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	256.6	257.0	256.7
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	366.1	270.1	268.1
65. TUR WALL TEMPERATURE	TWT	DEG. FAHR	87.1	87.6	87.4
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	908.3	939.7	971.7
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	821.2	1023.8	1049.1
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	776.3	990.3	1013.6
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	591.8	807.3	822.3
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	559.9	785.3	799.5
71. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	88.3	89.6	90.8
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	462.3	321.7	306.2
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	974.5	1272.7	1271.5
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	958.3	1223.9	1219.6
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	141.2	147.5	149.5
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	776.7	892.2	886.2
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	298.4	170.2	151.7
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	304.5	182.7	160.9
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	381.3	362.1	347.4
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	344.8	314.0	296.2
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	932.7	1067.0	1107.5
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	866.2	917.3	921.6
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	1032.2	1361.0	1354.8
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	1045.3	1308.0	1309.0

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ENGINE S/N 1

MODEL 8911

P716 REV.01/08/86

PRELIMINARY TEST REPORT - 02/H2

BAROMETRIC PRESSURE	14.43	PSIA	T/C	AT 0.37720	IN2	MODEL NU	8911
TIME OF RUN	1427	HR S	T/C	AE 15.1360	IN2	TEST DATE	04/17/86
LENGTH OF RUN	30.0	SEC	FUEL	NOM 0.0	LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0	MNH	OXID	NOM 0.0	LBS/SEC	TEST NO	4391
OXID SP.GR. 60/60	0.0	N204	FSG	NOM 0.0		T/C S/N	
FUEL TRIM ORIFICE			OSG	NOM 0.0		INJ S/N	
OXID TRIM ORIFICE						F/UX VAL S/N	/

EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	132.8	140.9	153.1	162.7	167.9	169.5	183.4	198.0
63. FUEL CAVITY TEMP	FCT	DEG.FAHR	256.7	257.4	257.5	257.5	257.5	257.5	257.4	257.2
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	320.5	234.4	228.2	222.4	218.9	216.5	208.4	204.4
65. TU9 WALL TEMPERATURE	TWT	DEG.FAHR	87.7	87.7	87.6	87.7	87.7	87.8	87.7	87.8
66. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	892.6	885.2	880.4	876.8	873.9	871.7	876.9	896.1
67. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	798.3	795.3	805.2	820.5	837.1	854.4	924.9	966.1
68. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	765.7	762.4	772.8	788.9	807.6	826.1	900.7	944.5
69. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	579.6	574.7	582.2	597.6	618.2	640.3	728.8	771.5
70. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	556.0	551.6	557.6	572.5	592.8	615.3	704.8	748.8
71. LOAD CELL TEMPERATURE	LCT	DEG.FAHR	89.1	89.1	89.0	88.9	88.8	88.8	88.9	89.8
72. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	444.5	438.5	427.4	416.2	405.3	395.0	352.7	325.8
73. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	943.8	958.4	1017.6	1065.8	1101.2	1128.8	1179.7	1180.4
74. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	940.7	952.0	1003.4	1045.4	1077.7	1099.8	1139.0	1136.1
75. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	138.9	138.3	138.7	139.0	139.1	139.6	139.5	138.5
76. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	740.2	743.2	769.3	791.4	806.0	814.9	825.2	818.2
77. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	256.6	259.5	256.0	247.6	238.0	228.2	186.6	162.6
78. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	257.6	261.1	259.4	253.3	245.7	237.5	199.8	171.4
79. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	348.4	349.1	345.4	349.3	348.8	348.2	343.6	336.7
80. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	319.0	320.0	320.0	318.8	317.8	316.4	306.2	293.3
81. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	904.0	926.6	933.8	940.5	945.9	951.6	970.1	981.7
82. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	845.7	842.9	844.5	847.8	850.5	852.8	855.8	852.6
83. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	1010.7	1028.7	1086.3	1134.4	1165.6	1187.5	1237.8	1254.5
84. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	1020.3	1035.5	1078.2	1112.8	1135.8	1154.5	1188.5	1198.1

# RELL AEROSPACE TEXTRON

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PARAMETER		SYMBOL	UNITS	STATIC	20.0	29.4
EXTRA PARAMETERS						
62. CELL AMBIENT TEMPERATURE		TAMB	DEG.FAHR	132.8	206.1	217.8
63. FUEL CAVITY TEMP		FCT	DEG.FAHR	256.7	256.9	256.4
64. NOZZLE LAND TEMP.		NLT	DEG.FAHR	320.5	202.1	200.5
65. TUB WALL TEMPERATURE		TWT	DEG.FAHR	87.7	87.9	87.9
66. SKIN TEMP. NO. 3		SKNT3	DEG.FAHR	892.6	914.7	940.8
67. SKIN TEMP. NO. 4		SKNT4	DEG.FAHR	798.3	989.0	1010.6
68. SKIN TEMP. NO. 5		SKNT5	DEG.FAHR	765.7	965.8	983.9
69. SKIN TEMP. NO. 6		SKNT6	DEG.FAHR	579.6	787.4	799.0
70. SKIN TEMP. NO. 7		SKNT7	DEG.FAHR	556.0	766.8	778.1
71. SKIN TEMP. NO. 8		SKNT8	DEG.FAHR	89.1	90.6	92.3
72. LOAD CELL TEMPERATURE		LCT	DEG.FAHR	89.1	90.6	92.3
73. SKIN TEMP. NO. 9		SKNT9	DEG.FAHR	444.5	309.9	295.4
74. SKIN TEMP. NO. 10		SKNT10	DEG.FAHR	943.8	1184.2	1180.6
75. SKIN TEMP. NO. 11		SKNT11	DEG.FAHR	940.7	1137.4	1130.5
76. SKIN TEMP. NO. 12		SKNT12	DEG.FAHR	138.9	138.3	138.5
77. SKIN TEMP. NO. 13		SKNT13	DEG.FAHR	740.2	817.6	811.0
78. SKIN TEMP. NO. 14		SKNT14	DEG.FAHR	256.6	148.3	132.6
79. SKIN TEMP. NO. 15		SKNT15	DEG.FAHR	257.6	156.8	140.7
80. SKIN TEMP. NO. 16		SKNT16	DEG.FAHR	348.4	329.0	314.2
81. SKIN TEMP. NO. 17		SKNT17	DEG.FAHR	319.0	281.2	261.8
82. SKIN TEMP. NO. 18		SKNT18	DEG.FAHR	904.0	989.3	1003.7
83. SKIN TEMP. NO. 19		SKNT19	DEG.FAHR	845.7	849.2	847.1
84. SKIN TEMP. NO. 20A		SKNT20A	DEG.FAHR	1010.7	1248.5	1245.0
85. SKIN TEMP. NO. 21A		SKNT21A	DEG.FAHR	1020.3	1190.8	1191.5

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## BELL AEROSPACE TEXTRON

PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

MODEL 8911

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BAROMETRIC PRESSURE	14.43 PSIA	T/C	AT 0.37720 IN2	MODEL NU	8911
TIME OF RUN	1526 HRS	T/C	AE 15.1360 IN2	TEST DATE	04/17/86
LENGTH OF RUN	30.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP. GR.	60/60	OXID	NOM 0.0 LBS/SEC	TEST NU	4392
OXID SP. GR.	60/60	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE	0.0 N204	OSC	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/OX VAL S/N	/

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	86.1	93.5	103.0	109.8	117.0	121.0	131.8	136.9
63. FUEL CAVITY TEMP.	FCT	DEG. FAHR	77.8	77.9	78.6	78.6	78.7	78.9	80.0	80.4
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	163.8	211.2	247.7	269.7	282.1	289.3	305.4	308.3
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	85.9	85.9	85.9	85.9	85.9	85.8	85.9	86.1
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	124.4	124.5	124.0	124.2	124.6	124.8	149.4	217.8
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	110.8	117.1	133.7	153.3	176.7	208.2	377.5	523.9
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	108.6	113.2	128.5	148.3	171.5	200.4	364.6	505.9
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	89.3	101.1	119.0	139.7	161.7	193.3	388.5	537.0
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	87.2	94.3	111.6	131.3	153.9	183.6	366.5	507.6
71. SKIN TEMP. NO. 8	SKNT8	DEG. FAHR	87.8	87.9	88.0	88.1	88.5	88.7	89.6	90.5
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	95.6	95.5	95.6	95.0	94.9	94.4	95.7	103.2
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	138.5	172.4	330.6	488.2	623.2	736.0	1060.3	1181.5
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	139.8	170.8	314.9	457.1	581.7	688.1	1000.8	1122.9
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	88.5	88.8	90.5	92.8	94.4	96.0	100.4	103.3
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	156.1	179.1	276.1	375.4	456.6	521.8	701.0	774.0
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	160.9	160.8	159.2	156.5	153.2	150.6	145.6	141.1
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	158.6	158.7	157.6	155.4	152.9	150.7	144.3	137.9
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	156.4	156.6	156.5	156.6	157.0	157.4	161.7	168.8
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	156.4	156.6	156.7	157.0	157.3	158.2	163.2	170.5
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	123.9	129.8	147.8	165.2	183.4	204.2	302.1	390.6
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	128.4	130.8	141.2	150.6	161.3	171.6	232.6	288.8
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	143.7	177.3	330.8	481.6	617.2	733.1	1092.9	1238.5
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	143.3	181.0	332.1	475.0	601.8	711.6	1057.6	1200.8

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.43 PSIA	T/C	AT 0.37720 IN2	MODEL NU	8911
TIME OF RUN	1526 HRS	T/C	AE 15.1360 IN2	TEST DATE	04/17/86
LENGTH OF RUN	33.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0 MMH	OXID	NOM 0.0 LBS/SEC	TEST NU	4392
OXID SP.GR. 60/60	0.0 N204	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE		OSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/U X VAL S/N	/
EXTRA PARAMETERS					
PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG. FAHR	86.1	144.4	152.9
63. FUEL CAVITY TEMP.	FCV	DEG. FAHR	77.8	82.7	86.7
64. NOZZLE LAND TEMP.	NLT	DEG. FAHR	163.8	309.9	312.6
65. TUB WALL TEMPERATURE	TWT	DEG. FAHR	85.9	85.9	86.1
66. SKIN TEMP. NO. 3	SKNT3	DEG. FAHR	124.4	316.3	504.0
67. SKIN TEMP. NO. 4	SKNT4	DEG. FAHR	110.8	639.8	786.7
68. SKIN TEMP. NO. 5	SKNT5	DEG. FAHR	108.6	618.6	762.8
69. SKIN TEMP. NO. 6	SKNT6	DEG. FAHR	89.3	632.9	724.2
70. SKIN TEMP. NO. 7	SKNT7	DEG. FAHR	87.2	602.0	696.8
71. LOAD CELL TEMPERATURE	LCT	DEG. FAHR	87.8	91.5	93.2
72. SKIN TEMP. NO. 9	SKNT9	DEG. FAHR	95.6	116.9	148.0
73. SKIN TEMP. NO. 10	SKNT10	DEG. FAHR	138.5	1228.7	1259.3
74. SKIN TEMP. NO. 11	SKNT11	DEG. FAHR	139.8	1171.2	1208.5
75. SKIN TEMP. NO. 12	SKNT12	DEG. FAHR	88.5	103.5	105.2
76. SKIN TEMP. NO. 13	SKNT13	DEG. FAHR	156.1	809.0	841.0
77. SKIN TEMP. NO. 14	SKNT14	DEG. FAHR	160.9	138.9	137.1
78. SKIN TEMP. NO. 15	SKNT15	DEG. FAHR	158.6	134.8	132.5
79. SKIN TEMP. NO. 16	SKNT16	DEG. FAHR	156.4	173.9	187.6
80. SKIN TEMP. NO. 17	SKNT17	DEG. FAHR	156.4	175.1	186.7
81. SKIN TEMP. NO. 18	SKNT18	DEG. FAHR	123.9	472.1	605.9
82. SKIN TEMP. NO. 19	SKNT19	DEG. FAHR	128.4	339.3	423.4
83. SKIN TEMP. NO. 20A	SKNT20A	DEG. FAHR	143.7	1302.3	1348.3
84. SKIN TEMP. NO. 21A	SKNT21A	DEG. FAHR	143.3	1262.4	1305.7

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MODEL 8911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.43 PSIA	T/C	AT 0.37720 IN2	MODEL NU	8911
TIME OF RUN	1529 HRS	T/C	AE 15.1360 IN2	TEST DATE	04/11/86
LENGTH OF RUN	30.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0 MMH	OXID	NOM 0.0 LBS/SEC	TEST NO	4393
OXID SP.GR. 60/60	0.0 N204	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE		OSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE		F/OX VAL S/N			

## EXTRA PARAMETERS

PARAMETER	SYMBOL	UNITS	STATIC	1.0	2.0	3.0	4.0	5.0	10.0	15.0
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	100.3	108.4	117.6	123.5	123.8	125.9	133.4	137.2
63. FUEL CAVITY TEMP	FCT	DEG.FAHR	112.8	113.0	112.8	113.1	113.4	113.9	115.4	116.0
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	284.6	245.7	253.3	254.1	254.7	253.5	249.9	246.5
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	86.4	86.4	86.4	86.5	86.7	86.6	86.3	86.7
66.			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	599.4	595.3	592.8	590.6	588.9	588.0	605.9	650.8
68. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	529.4	529.6	540.3	556.8	576.8	598.4	706.7	789.8
69. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	514.8	514.2	524.7	541.2	562.2	584.8	697.5	781.5
70. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	390.5	389.7	397.5	414.4	436.5	462.4	589.7	671.8
71. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	379.0	377.6	384.7	400.6	422.5	448.8	576.7	658.1
72. LOAD CELL TEMPERATURE	LCT	DEG.FAHR	91.4	91.2	91.4	91.3	91.3	91.3	92.0	92.3
73. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	336.6	330.2	321.3	312.5	304.0	295.5	260.7	238.6
74. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	669.3	699.3	786.9	870.1	938.2	992.9	1136.9	1173.2
75. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	673.5	701.2	786.2	867.7	933.9	985.9	1116.3	1147.1
76. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	99.9	100.0	101.8	102.6	103.3	103.9	106.5	106.8
77. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	517.6	532.9	591.6	648.0	690.8	721.3	790.5	807.5
78. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	221.7	222.5	215.8	214.7	208.5	202.1	174.3	158.9
79. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	216.5	217.6	215.6	211.7	206.3	200.8	175.6	161.0
80. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	229.1	229.9	230.2	230.2	230.5	231.1	232.8	233.8
81. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	216.2	216.8	217.3	218.3	219.2	220.4	223.1	222.2
82. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	531.2	535.4	547.5	558.7	569.5	579.5	624.4	649.6
83. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	434.8	436.5	442.0	447.9	454.0	460.0	485.2	505.5
84. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	719.3	747.4	833.2	909.8	975.0	1029.7	1179.7	1233.3
85. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	740.1	767.5	842.7	906.3	961.7	1008.7	1145.0	1194.8

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BELL AEROSPACE TEXTRON

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MODEL 9911 - PRELIMINARY TEST REPORT - 02/H2 ENGINE S/N 1

MODEL 9911

P716 REV.01/08/86

BAROMETRIC PRESSURE	14.43 PSIA	T/C	AT 0.37720 IN2	MODEL NU	8911
TIME OF RUN	1529 HRS	T/C	AE 15.1360 IN2	TEST DATE	04/17/86
LENGTH OF RUN	30.0 SEC	FUEL	NOM 0.0 LBS/SEC	TEST CELL	A-2
FUEL SP.GR. 60/60	0.0 MMH	OXID	NOM 0.0 LBS/SEC	TEST NU	4393
OXID SP.GR. 60/60	0.0 N204	FSG	NOM 0.0	T/C S/N	
FUEL TRIM ORIFICE		OSG	NOM 0.0	INJ S/N	
OXID TRIM ORIFICE				F/OX VAL S/N	/
EXTRA PARAMETERS					
PARAMETER	SYMBOL	UNITS	STATIC	20.0	29.4
62. CELL AMBIENT TEMPERATURE	TAMB	DEG.FAHR	100.3	144.3	145.2
63. FUEL CAVITY TEMP	FC	DEG.FAHR	112.8	117.0	120.6
64. NOZZLE LAND TEMP.	NLT	DEG.FAHR	284.6	244.9	243.5
65. TUB WALL TEMPERATURE	TWT	DEG.FAHR	86.4	86.4	86.8
66. SKIN TEMP. NO. 3	SKNT3	DEG.FAHR	599.4	702.5	790.1
67. SKIN TEMP. NO. 4	SKNT4	DEG.FAHR	529.4	847.4	514.3
68. SKIN TEMP. NO. 5	SKNT5	DEG.FAHR	514.8	839.6	905.4
69. SKIN TEMP. NO. 6	SKNT6	DEG.FAHR	390.5	717.9	758.8
70. SKIN TEMP. NO. 7	SKNT7	DEG.FAHR	379.0	703.9	746.5
71. LOAD CELL TEMPERATURE	LCT	DEG.FAHR	91.4	93.0	93.9
72. SKIN TEMP. NO. 9	SKNT9	DEG.FAHR	336.6	227.4	222.8
73. SKIN TEMP. NO. 10	SKNT10	DEG.FAHR	669.3	1183.8	1194.4
74. SKIN TEMP. NO. 11	SKNT11	DEG.FAHR	673.5	1157.2	1168.4
75. SKIN TEMP. NO. 12	SKNT12	DEG.FAHR	99.9	107.5	108.3
76. SKIN TEMP. NO. 13	SKNT13	DEG.FAHR	517.6	815.2	824.5
77. SKIN TEMP. NO. 14	SKNT14	DEG.FAHR	221.7	148.4	136.9
78. SKIN TEMP. NO. 15	SKNT15	DEG.FAHR	216.5	149.7	136.9
79. SKIN TEMP. NO. 16	SKNT16	DEG.FAHR	229.1	233.8	232.9
80. SKIN TEMP. NO. 17	SKNT17	DEG.FAHR	216.2	220.0	215.1
81. SKIN TEMP. NO. 18	SKNT18	DEG.FAHR	531.2	664.5	738.2
82. SKIN TEMP. NO. 19	SKNT19	DEG.FAHR	434.8	523.1	551.6
83. SKIN TEMP. NO. 20A	SKNT20A	DEG.FAHR	719.3	1251.0	1260.6
84. SKIN TEMP. NO. 21A	SKNT21A	DEG.FAHR	740.1	1212.5	1222.5

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16. Abstract  A program to design, fabricate and test a 50 lbf (222 N) thruster was undertaken (Contract NAS3-24656) to demonstrate the applicability of the "reverse flow" concept as an item of auxiliary propulsion for the Space Station. The thruster was to operate at a mixture ratio (O/F) of 4, be capable of operating for 2 million lbf-seconds (8.896 million N-seconds) impulse with a chamber pressure of 75 psia (52 N/cm <sup>2</sup> ) and a nozzle area ratio of 40. Superimposed was also the objective of operating with a stainless steel spherical combustion chamber, which limited the wall temperature to 1700°F (1200°K), an objective specific impulse of 400 lbf-sec/lbm (3923 N-seconds/Kg), and a demonstration of 500,000 lbf-second (2,224,000 N-seconds) of total impulse. The demonstration of these objectives required a number of design iterations which eventually culminated in a very successful 1000 second demonstration, almost immediately followed by a changed program objective imposed to redesign and demonstrate at a mixture ratio (O/F) of 8. This change was made and more than 250,000 lbf-seconds (1,112,000 N-seconds) of impulse was successfully demonstrated at a mixture ratio of 8. This document contains a description of the effort conducted during the program to design and demonstrate the thrusters involved.					
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